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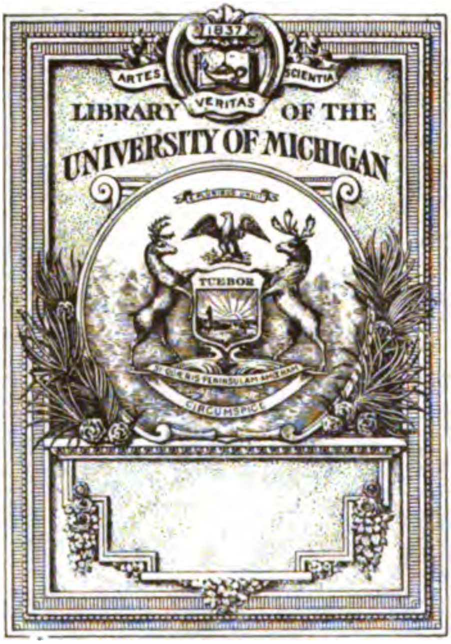

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NEW YORK STATE DEPARTMENT OF LABOR

ANNUAL REPORT

OF THE

INDUSTRIAL COMMISSION

FOR THE NINE MONTHS ENDED JUNE 30,

1916

TRANSMITTED TO THE LEGISLATURE APRIL 17, 1917

ALBANY
STATE DEPARTMENT OF LABOR
1917

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IN ASSEMBLY

April 17, 1917

ANNUAL REPORT

OF THE

New York State)

INDUSTRIAL COMMISSION

STATE OF NEW YORK

Department of Labor

Albany, *April* 17, 1917.

To the Legislature:

Pursuant to law, the annual report of the Industrial Commission for the nine months ended June 30, 1916, is herewith submitted.

Respectfully,
John Mitchell,
Chairman;
Edward P. Lyon,
Louis Wiard,
James M. Lynch,
Henry D. Sayer,
Commissioners.

313280

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Part I

REPORT OF COMMISSION

REPORT OF THE INDUSTRIAL COMMISSION

To the Legislature:

Pursuant to the provisions of the Labor Law, there is presented herewith the annual report of the Industrial Commission for the nine months ended June 30, 1916, together with the reports of the operation of the bureaus of the Department of Labor, under the direction of the Commission. Owing to the change in the law, enacted by the last Legislature, the fiscal year new begins on July 1 and ends on June 30. Inasmuch as the last report of the Industrial Commission was for the year ended September 30, 1915, the period to be covered by this report is for only nine months. This applies to reports of the bureaus under the Commission, except the report of the State Insurance Fund, which is submitted for the calendar year ended December 31, 1916.

While the reports and statistical data transmitted with this report are restricted to the reporting period mentioned, it is necessary for us, in the proper presentation of the condition of affairs of the Commission, to refer herein to many matters subsequent to June 30.

GENERAL

The Industrial Commission is now nearing the end of the second year of its existence. Brought into being under conditions of distrust among many of those who look to the Department for that protection which is vouchsafed to them in the Labor Law and the Workmen's Compensation Law, the Commission, we believe, has justified the expectations of those who believed in the commission form of administration of labor laws, and has generally gained the confidence and the co-operation of the wage earners of the State. As is often the case, the Commission met with some criticism and even censure because it did not at once, and without proper study of the problems involved, revolutionize the work of the enlarged and consolidated department. The Commission has preferred, however, to proceed with care and deliberation, with a view at all times to the necessities of the situation, to bring about better conditions, secure greater efficiency and to co-ordinate in greater measure all the various activities relating to industry and the workingman.

Reorganization should not be synonymous with disorganization. The personnel of the various bureaus has been studied, methods have been inquired into and changes made only where they were found to be in the best interest of the service. Other changes will, in time, doubtless be found necessary in the methods of handling some of the business of the Department. On the whole, however, the Department, we believe, is in a sound and wholesome condition, with a fine spirit among its personnel, and transacting a far greater volume of business than ever before in its existence.

On January 1, 1917, the term of William H. H. Rogers, of Rochester, as a Commissioner, expired and on February 13, 1917, Henry D. Sayer, of Richmond Hill, Queens county, succeeded him, having been appointed by the Governor, with the advice and consent of the Senate, for the full term of six years. Mr. Sayer had been Secretary of the Commission since June 1, 1915, when the Commission was organized. No secretary has been appointed in his place at the time of making this report and Charles D. O'Connell, of New York, Assistant Secretary of the Commission, has been designated as Acting Secretary in the interim. No other changes in the personnel of the executive officers of the Commission have been made since the last report.

APPROPRIATIONS

The total appropriations made for salaries and expenses of maintenance and operation of the Department for the fiscal year beginning July 1, 1916, were $1,139,784. This amount was considerably less than the Commission believed would be required to administer properly and efficiently the affairs of the Department, and represented a considerable reduction in the amount asked for by the Commission. The Commission, however, accepted the reductions of the Executive and the Legislature in a spirit of complete co-operation and at once set about the task of conforming the Department to the situation presented by the budget. Through lack of appropriations, several positions were abolished, including the chief factory inspectors of the first and second districts, three assistant deputy commissioners in the Bureau of Workmen's Compensation, two fire prevention engineers, the chief medical inspector of the Division of Industrial Hygiene, seven special investigators, the assistant to the director of the Division of Industrial Hygiene, assistant counsel in the Bureau of Industries and Immigration, one expert and one statistician in the Bureau of Statistics and Information, and one special agent, and some minor clerical and stenographic positions.

On July 1, 1916, when the new budget became effective, the Commission had fairly well reorganized such part of its work as was affected by these reductions, and the work has continued, though under somewhat restricted conditions.

These reductions in appropriations would not have been so seriously felt had it not been for the extraordinary and unlooked for increase in industrial activity and the consequent greater number of claims for compensation arising out of industrial accidents. A reference to the report of the Second Deputy Commissioner, submitted herewith, will show the extent of the increase in the number of compensation cases. The figures are startling and are impressive of the abnormal conditions prevailing in the industrial world due to the war in Europe.

In order to have a force adequate to handle the greatly increased business of the Department speedily and efficiently, the Commission has been obliged to recommend to the Legislature an increased budget for the next fiscal year, and to request some funds to be made available during the remainder of the present fiscal year. These amounts have been kept as low as the Commission feels can be done consistently with a proper performance of its duty.

INDUSTRIAL COUNCIL

The Industrial Council has continued in helpful co-operation with the Commission. They have advised the Commission in the adoption of amendments to the Industrial Code and in matters of proposed legislation. In its last report the Commission called attention to the failure of the Legislature to provide for the reimbursement of the members of the Council for their expenses in attending meetings. The Commission feels that it is casting an unfair burden upon the members who unselfishly give not only of their time without recompense, but pay their own expenses as well. A bill containing a provision for the payment of expenses to the members of the Council was passed at the last session of the Legislature, but on account of other provisions contained in the bill which did not meet with Executive approval, the bill was vetoed. It is earnestly hoped that the Legislature will this year make adequate provision for these expenses, in a bill which may meet with the approval of the Governor.

The association in the Council of the representatives of the workingmen and of the employers has been productive of much real good. Mutual understanding and sympathetic consideration of the problems of all have been promoted round the Council table. Much remains yet to be desired, but great progress has already been made.

In the latter part of the year 1916, Mr. Irving T. Bush, of New York City, presented to the Governor his resignation as a member of the Council. At the time of writing, no successor to Mr. Bush has been selected.

INDUSTRIAL SAFETY CONGRESS

Early in the year, the Commission took under consideration the bringing to the attention of employers and workmen generally of the importance of safety standards and the prevention of industrial accidents. Many employers had already accomplished results of great good in reducing the number of disabilities and deaths from accident. But the number of preventable accidents was still so alarmingly great that it was felt that no more important question could occupy the attention of the Commission.

It was, therefore, decided to hold a conference or congress under the auspices of the Commission and to invite to it all persons who might be interested in the question. A committee was formed under the chairmanship of Commissioner Lynch, on which were represented various groups interested in the subject. A call was issued for the congress and more than 10,000 invitations were sent out to factory owners and organizations of workmen. The congress assembled in Syracuse on December 11, 1916, and continued in session four days. An excellent program was arranged, including speakers of wide reputation and special information in their respective fields. The congress was very well attended not only by employers and shop superintendents, but also by many representatives of the workmen themselves, who recognized in the education of the workmen in proper safety standards, a work of equal importance with the education of the shop owner to the desirability of providing machine safeguards and safe working conditions. So great a success was this first safety congress, that it is hoped to establish it as a regular annual feature of the industrial life of the State, and it is earnestly recommended that the Legislature provide the necessary funds for carrying on this feature of the Commission's activities.

The proceedings of the first safety congress appear as an appendix to this report and have also been published by the Commission in pamphlet form.

The thanks of the Commission are extended to all who so earnestly worked to bring about the greatest good through this congress. Particularly, however, the Commission desires to acknowledge the assistance of the National Safety Council and the American Museum of Safety, as well as that of the State Federation of Labor, the Associated Manufacturers and Merchants, and the National Civic Federation.

LEGISLATION

Too much cannot be said in praise of the attitude of labor and the employers of labor in the matter of legislation during the session of the Legislature in 1916. Very largely through the spirit of co-operation and understanding brought about in the meetings of the Industrial Council, representatives of interests desiring legislation on various subjects affecting labor and industry, met together in conference at Albany, and the various proposed amendments to the Labor and Workmen's Compensation Laws were submitted for mutual consideration and discussion. The members of the Industrial Commission met with these representatives, and before the adjournment of the Legislature practical agreement had been reached on all proposed measures. These interests then joined with the Commission in presenting this agreed program to the Legislature.

LABOR LAW

Among the various perplexing questions involved in the employment of women and children, none has presented a sharper division of opinion than that affecting the hours of labor of women in canneries. This question had come up in each session of the Legislature for years, the canners seeking relief from what they regarded as the very burdensome provisions of the law, which they claimed restricted their output and often resulted in waste and loss of perishable product, due to their inability to lawfully employ their female workers long enough hours to process and pack the vegetables or fruit that at times were delivered in large quantities, due to sudden ripening. These efforts have always been strenuously resisted, and the controversies that have arisen over the question have at times been very acrimonious. With a desire to reach a basis for an agreement on this most troublesome question, so that the women and children workers might be adequately protected, and at the same time meet the seasonal difficulties of the canners, the Commission called a public hearing on the question, and invited the New York State Canners Association to present their needs, and also invited various public bodies and public spirited organizations to be represented.

The Commission had in the preceding season caused a very close and intensive study to be made of the canning question by one of the Department's experts, who visited all the various canning establishments, studied the working and housing conditions of the workers, and also looked closely into the matter from the standpoint of the farmers, who raise the product for the canneries. The medical inspectors of the Department also made careful observations of the effects of the canning work upon the health of the workers.

With these reports before them, and as a result of the expressions of opinion at the public conference, the Commission felt justified in presenting a measure to the Legislature which in their opinion would have met the situation from every viewpoint. The measure would have adequately protected the workers from unduly long hours, would have granted certain relief to the canning industry and would have permitted a limited amount of overtime in emergencies, properly limited and under the regulation and control of the Industrial Commission.

In the Legislature, however, this measure was combined with various other proposed amendments to the Labor Law, in a bill to amend the Labor Law generally, commonly called the "omnibus labor bill." This bill contained the various proposed amendments suggested by the Commission and the agreed program of the labor and manufacturing interests. It also combined some other provisions which had not been generally agreed to in advance. The bill contained many admirable provisions. Some other provisions were the subject of bitter attack. The bill was passed and a full public hearing on it was ordered by the Governor. The hearing was attended by a great number of persons, who voiced their opposition. The provisions that were most attacked were the canneries provision, the amendment that would have permitted under control of the Commission a limited amount of overtime in case of breakage of machinery, and the provision changing the number of square feet of floor area in a factory building for which an additional exit is required.

The bill failed of approval by the Governor who pointed out in his veto memorandum that the harm resulting from these provisions more than outweighed the good that might come from the other provisions. It is the intention of the Commission to resubmit to the Legislature at this time a number of proposed amendments that were included in last year's bill to which no exception can well be taken in the hope that, unhampered by provisions that are sure to lead to controversy, they may this year become law.*

COMPENSATION LAW

As the result of its close observation of the working of the Workmen's Compensation Law and the practical questions that had presented themselves in the course of its administration, the Industrial Commission presented to the last Legislature a considerable number of proposed amendments to the law. These matters were all considered in conferences with representatives of employers and workingmen, and submitted to the Industrial Council. As a result an act was passed and signed by the Governor, which amended the Compensation Law in many important respects. These amendments took effect June 1, 1916.

---

* The amendments of law (other than the Compensation Law) recommended by the Commission for passage in 1917 were embodied in bills introduced as Senate Bills Nos. 1126, 1127, 1128 and 1129 (Printed Nos. 1336, 1387, 1338 and 1339 respectively).

Not only was the law made to apply to many employments that were actually hazardous and which had seemingly been overlooked in the law as originally drawn, but it also was made to apply to all hazardous employments carried on by the State or any municipal corporation or other political subdivision of the State. Thus employees in the public service are now put on the same basis as those of private employers so far as compensation for accidental injury goes.

Another very important amendment was that providing for an elective system for extending the Compensation Law to employees who are not otherwise under the mandatory provisions of the law. It is now permitted any employer and his employees by their joint action to bring themselves under the operation of the law. Such election is evidenced on the part of the employer by his posting of notices in his place of employment, in a form prescribed by the Commission, notifying his employees of the fact that he has elected to bring himself under the Compensation Law and stating that he has secured the payment of compensation in one of the ways provided in the law. At the same time he must notify the Commission of that fact, and upon receiving the approval of the Commission, his election is complete. All employees are deemed to have accepted the election of the employer, unless they individually notify the Commission that they do not wish to come under the law. Any such employee, if not engaged in one of the hazardous employments enumerated in the law, retains his original status and the employer's liability to him remains the same as it was before the employer gave notice of his election to come under the Compensation Law.

It is worthy of note that a great proportion of employers, some of whose employees were under the law and others were not, have filed notices of their election to cover all their employees under the law, these notices affecting many thousands of employees. It is also worthy of note that but one employee in the whole State has filed a notice refusing to come under the provisions of the law when his employer elected to do so.

Another amendment related to the expenses of the State Insurance Fund. Under the original act the expenses of administering the State Fund were to be paid by the State until July 1, 1918.

By the amendment, the expense of administration was shifted to the State Fund itself on July 1, 1917, a year earlier than originally contemplated. The State Fund had exceeded expectations of some in the amount of its business and its strength and it was found that it might safely be placed upon a self-sustaining basis. On June 30, 1917, therefore, the Commission will determine the amount of expense of administration during the preceding year and will then cause the State Fund to reimburse that amount to the State Treasury.

Probably no more important amendment was made, however, than that which placed the State Fund under the supervision of the State Superintendent of Insurance, insofar as concerns the adequacy of its reserves, and its investments. The Commission welcomes gladly this supervision. They are of the opinion that the security of payment of compensation to injured workmen cannot be made too safe. This can only be guaranteed by adequate and safe reserves being set aside to meet such future payments. The Commission has never doubted the ample security of its reserves, nor the methods of computing them, and is confident that any examination by the Insurance Department will disclose the sound condition of the Fund. There should be no controversy on such a question, however, and as an added factor of safety in the public interest, the Superintendent should have this right of examination. This, however, does not mean that the Superintendent of Insurance has any right to supervise the premium rates charged by the State Fund, except that if insufficient rates were charged, they would necessarily be reflected in impaired or inadequate reserves.

The Superintendent of Insurance has begun his examination of the State Fund under this law, the results of which will be made public as soon as completed.

The other amendments to the Compensation Law had chiefly to do with perfecting the provisions in regard to matters of procedure, and some of the definitions.

In its requests for appropriations, the Commission has submitted to the Legislature a plan for the reorganization of the claim examining division of the Bureau of Compensation. Under the present system all claims outside of New York City and Long

Island are sent to the Albany office, where the papers are examined and the dockets made up, and all awards made except those in which special hearings are required. When special hearings are necessary, or additional information required, the papers are sent by the Albany office to the branch office nearest the home of the claimant, or the place where the accident occurred. This method has led to no little confusion and delays at times. It is proposed under the reorganization plan to have small examining units in each of the branch offices and to have all claims originating in the upstate districts handled in the local offices. The Commission believes this will result in greater convenience to claimants and employers, as well as saving time and confusion.

A matter of grave concern to the Commission has been the security of long term awards and widows' pensions which are likely to extend over a period of years, where the awards are against mutual insurance companies and self insurers. In the case of self insurers, their liability for compensation is secured by the deposit of bonds with the Commission, equal in amount to six months premium in the State Fund upon their payroll exposure. This deposit of securities is ordinarily sufficient to cover current losses. It is wholly insufficient to secure current losses with the addition of the growing accumulation of long term and death claims. Further, while the financial condition of a self insurer may be excellent at this time, the Commission cannot be sure of its condition ten, twenty or perhaps forty years from now, when some of these claims might still be running. To meet this difficulty, therefore, the Commission, by resolution adopted May 31, 1916, required all self insurers and mutual companies to pay to the Commission, in trust, the present values of all death claims for which they were liable as determined by the actuary of the Commission. This action was taken pursuant to the provisions of section 27 of the Compensation Law which further provides that when such payment to the Commission is made, all liability of the employer or insurance carrier under the award shall cease. There was thus accumulated a large fund, which constituted an aggregate trust fund for the benefit of the claimants in the various cases affected. The right of the Commission to make this order, however, was challenged in the case of Ida

Adams v. New York, Ontario & Western Railway Company. In that case the Appellate Division, and later the Court of Appeals, (175 App. Div. 714; affirmed 220 N. Y. 579) held that the Commission had no such authority as it had assumed and consequently it followed that the fund in the hands of the Commission was illegally held and must be returned. The Commission, under the advice of the Attorney-General, has ordered that all amounts paid into such fund be returned less the amounts already paid by the Commission to the various claimants, and ordered the companies against whom the awards were originally made to resume the periodical payments of compensation under the several awards.

The Commission has held conferences with representatives of the companies affected and many of them are desirous that they be allowed to pay in all such long term awards, and thereby secure a discharge of future liability under them. To that end, an amendment has been drawn to section 27 so as to make entirely clear the right of the Commission to call in such capitalized claims and thereby protect the future payments to widows. It is earnestly to be hoped that the recommendation of the Commission in this regard will be adopted.*

FACTORY INSPECTION

The most important legislation passed during the last year affecting factory inspection was the so-called Lockwood-Ellenbogen law, designed to centralize inspections in the city of New York and to avoid duplications between the State and city departments. This law did not go completely into effect until October 1, 1916. Under its provisions, responsibility for all matters affecting the construction or alteration of factory buildings in New York City, especially those matters relating to exits, fire proofing of stairways, and fire escapes, was taken from this Commission and lodged with the local authorities.

In a general way, this law requires the fire commissioner of New York City to make all inspections and issue all orders for violations of the structural provisions of the Labor Law. The superintendent of buildings of each borough is empowered to supervise all new construction work and all alterations made in compliance with the orders of the fire commissioner and to examine all plans for the construction or alteration of factory buildings and to approve the same when they are found to be in conformity with the provisions of the Labor Law and the Industrial Code.

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* This and other amendments of the Compensation Law which were recommended by the Commission for passage in 1917 were embodied in a bill introduced as Senate Bill No. 893 (Printed No. 1038).

To review orders of the fire commissioner or a decision of the superintendent of buildings there was created a Board of Appeals, and to exercise the power to vary in particular cases provisions of the Labor Law or the Industrial Code, there was created a Board of Standards and Appeals. The Board of Standards and Appeals also has power to adopt new rules and regulations extending the provisions of the Labor Law, which rules when so adopted shall supersede the Industrial Code within the city of New York.

The effect of this law was to place the enforcement of the provisions of the Labor Law in the same city departments that had to do with the enforcement of other laws and city ordinances and rules relating to buildings. This made a uniform and simpler procedure for factory owners, builders and architects and resulted in a more direct responsibility of the local authorities.

This transfer of authority was made without serious difficulty, although an immense amount of labor was involved in transmitting to the fire department certified copies of the records of this Department relating to exits in the thousands of factory buildings in New York City.

There has, however, been no lessening in the number of factory inspections required. But relieving the factory inspectors from the necessity of enforcing the exit law, has given them more time to devote to other matters coming within this Department's jurisdiction, such as sanitation, child labor and illegal hours of women, safeguarding of machinery, etc.

The Bureau of Inspection has made a determined effort to hunt out and prosecute deliberate violations of the laws with regard to the hours of labor of women and minors.

The general shortage of labor has been seized upon in many instances to justify working illegal hours. The records of the Bureau of Inspection show an increasing number of violations detected and prosecuted.

In the State outside of New York City, the factory inspectors still have to devote much of their time and attention to enforcing the exit laws. The greatly increasing number of compliances and decreasing number of outstanding uncomplied orders demonstrates that the safety laws enacted in 1913, and the Industrial Code rules adopted supplementary to them, are now rapidly being complied with, and the Commission can now look forward to a time in the not far distant future when all old factory buildings will have been brought into conformity with the law.

No great trouble is experienced with new factory buildings. Architects and builders are becoming more familiar with the requirements of the law and anxious to have their buildings conform thereto in the first instance.

Good progress has been made in the matter of mercantile and tenement inspections. The Division of Homework Inspection worked in close co-operation with the Department of Health in New York City last summer during the severe epidemic of infantile paralysis. Under the direction of the Commission, the chief of that division revoked promptly the license of every tenement house in which homework was conducted as soon as the health department reported a case of infantile paralysis therein. No such revoked license was renewed until the health authorities advised that all danger of infection had passed.

THE APPLICATION OF SECTION 3 OF THE LABOR LAW TO EMPLOYEES IN STATE INSTITUTIONS

The State Department of Labor has encountered difficulties in enforcing the eight-hour and prevailing-rate-of-wages provisions of Labor Law, Section 3, because of alleged conflicting provisions in the Insanity Law, Sections 49 and 50, and the State Finance Law, Section 17.

A clause of Labor Law, Section 3, provides: "Nothing in this section shall be construed to apply to *stationary firemen in state hospitals, nor to other* persons regularly employed in state institutions, *except mechanics* * * *." The italicized phrases in this quotation were inserted by Laws of 1913, Chapter 494, amending Section 3. The phrase "persons regularly employed in state institutions" dates from Laws of 1899, Chapter 567, amending Section 3.

The Insanity Law, Sections 49 and 50, at the time of the above amendment of the Labor Law, Section 3, by Laws of 1913, Chapter 494, regulated the salaries and wages of officers and employees of state hospitals for the insane. Section 49 directed the State Hospital Commission to fix salaries and wages other than those fixed by a schedule contained in Section 50.

The State Finance Law, Section 17, at the time of the above amendment of the Labor Law, Section 3, by Laws of 1913, Chapter 494, contained the following provision: "The state comptroller and the president of the state board of charities shall from time to time classify into grades the officers and employees of the various charitable and reformatory institutions required by law to report to the fiscal supervisor and in the month of September of each year recommend to the governor such changes in the salaries or wages of such officers or employees for the ensuing fiscal year as may seem proper, but such changes shall not be made unless the governor shall approve the same in writing. Differences in the expense of living and rates of wages in the localities in which such institutions are situate may be considered. The comptroller shall have the power to audit subject to such classification."

The State Hospital Commission contended that the Insanity Law, Sections 49 and 50, regulating the wages of mechanics in state hospitals, prevailed over the exception of the Labor Law, Section 3, making the prevailing-rate-of-wages provision applicable to mechanics in state institutons. The Attorney-General's office in opinions rendered by Attorney-General Parsons under date of November 20, 1914, and by Attorney-General Woodbury under date of March 25, 1915 (Reports of N. Y. State Dept. of Labor, 1914, p. 306, and 1915, p. 387), refused to sustain this contention of the State Hospital Commission and held that the prevailing-rate-of-wages provision applied to mechanics in state hospitals. Thereafter, Laws of 1915, Chapter 949, added to the Insanity Law, Section 50, words: "The provisions of this section with respect to the rate of wages to be paid employees in all positions named in the foregoing schedules shall supersede the provisions of any other general or special law."

This added clause would seem to be intended by the Legislature to except the mechanics named in Section 50 from the prevailing-rate-of-wages provision of the Labor Law, Section 3, though it does not appear that the Attorney-General's office has rendered an opinion so construing its effect. The prevailing-rate of-wages provision would seem, however, to still apply to wages of state hospital mechanics, such as printers, fixed under the Insanity Law, Section 49.

The line of reasoning of the two opinions of the Attorney-General's office, cited above, relative to the prevailing-rate-of-wages provision would seem to apply equally to the eight-hour provision of the Labor Law, Section 3; that is, mechanics in state hospitals for the insane are protected by the eight-hour provision. The state hospitals for the insane appear to have put the eight-hour provision into effect. As showing their spirit of compliance, the bill, Senate 354, introduced in the Legislature by Senator G. L. Thompson, February 5, 1917, eliminates the twelve-hour shift for firemen from the Insanity Law, Section 50.

The line of reasoning of the two opinions of the Attorney-General's office cited above would seem to hold equally for the State Finance Law, Section 17, as for the Insanity Law, Sections 49 and 50; that is, mechanics in state institutions required to report to the Fiscal Supervisor of State Charities are protected by the Labor Law, Section 3. The question was a matter of correspondence between the State Commissioner of Labor and the Secretary of the Salary Classification Commission in August, 1914. Firemen of the State Tuberculosis Hospital at Raybrook and of the Craig Colony for Epileptics at Sonyea had complained to the Department of Labor that they were being compelled to work more than eight hours a day. The Commissioner of Labor, in a letter to the Secretary of the Salary Classification Commission, took the position that firemen in State hospitals other than State hospitals for the insane, being mechanics, were protected by the eight-hour provision of the Labor Law, Section 3. In reply the Secretary contended that the phrase "Nothing in this section shall be construed to apply to stationary firemen in state hospitals" covered state hospitals other than hospitals for the insane.

The Secretary also contended that wages of mechanics in institutions required to report to the Fiscal Supervisor of State Charities were subject to regulation by the Salary Classification Commission under the State Finance Law, Section 17, quoted above, to the exclusion of the prevailing-rate-of-wages provision of the Labor Law, Section 3.

The Commissioner of Labor, in reply, denied the correctness of the Secretary's position on both points. He suggested that the Secretary obtain an opinion from the Attorney-General. The Secretary promised to do so. In a communication the Attorney-General appeared to sustain the Secretary relative to hours of firemen in state hospitals other than hospitals for the insane, but did not touch upon the relation of the State Finance Law, Section 17, to the Labor Law, Section 3, in the matter of the prevailing-rate-of-wages clause.

This communication does not appear to have been submitted to the attention of the Commissioner of Labor or to have been published either in the Attorney-General's Opinions for 1914 or in the report of the State Department of Labor for 1914. In a letter to a complaining fireman of Sonyea under date of May 18, 1915, eight months after the above-mentioned communication, the Commissioner of Labor appears not to have known of any response whatever from the Attorney-General's office to the request of the Secretary of the Salary Classification Commission for an opinion. The power of the Salary Classification Commission to fix wage rates other than the prevailing rates of the localities for mechanics in state institutions reporting to the Fiscal Supervisor appears not to have been directly ruled upon by the Attorney-General's office relative to the effect of the phrase "except mechanics" upon the Insanity Law, Sections 49 and 50, would seem to hold good for its effect upon the State Finance Law, Section 17.

The application of the Labor Law, Section 3, to employees of state institutions *not* regularly employed has hardly been questioned. The Attorney-General's office, in an opinion of August 17, 1910 (Annual Report of the State Department of Labor, 1910, p. 319), held that determination whether employees are regular or not is "a question of fact in each instance" and that "neither the nature of the work nor the appropriation from which they are to be paid has any connection with the determination."

Granted that the Labor Law, Section 3, as amended by Laws of 1913, Chapter 494, applies to mechanics regularly employed in state institutions under the jurisdiction of the State Hospital Commission and the Fiscal Supervisor of State Charities, as well as to mechanics regularly employed in all other state institutions, the question has arisen, "What are mechanics?"

The Attorney-General's office, in an opinion of July 3, 1913 (Annual Report of Department of Labor, 1913, p. 269), adopted the definition of a mechanic given in the Century Dictionary and in an opinion of November 12, 1913 (*Id.*, p. 271), specified certain employees as coming within the definition, namely:

Engineers and their assistants, including engineers of the marine and railway departments of the Manhattan and Willard State Hospitals (except chief engineers performing no manual labor of their trades).
Linemen.
Plumbers and steamfitters and their helpers.
Firemen, including firemen in the marine and railway departments of Manhattan and Willard State Hospitals.
Master mechanics when performing manual labor of their trades.
Carpenters.
Painters.
Tinsmiths.
Shop foremen.
Tailors, including skilled female assistants.
Shoemakers.
Blacksmiths.
Pilots (Manhattan State Hospital).
Brakeman
Trackman } (Willard State Hospital).
Trainman
Printers
Compositor
Pressfeeders } (Utica State Hospital).
Ruler
Binder and helper
Quarrymen exercising special skill.

There are, of course, some other state institution employees who come within the Century Dictionary's definition of a mechanic. The above-cited opinion of July 3, 1913, refers to interpretation of the term "mechanics" by the courts in actual practice, which interpretation has been set forth in 5 Words and Phrases, 4457, and names barbers, carpenters, plasterers and printers as so covered by universal court interpretation.

The questions "What the state hospitals?" and "What are mechanics?" have been noticed. Two other and broader questions lie behind the application of the Labor Law, Section 3, namely, "What are state institutions?" and "What are employees?"

If it is desired to completely clear up the situation and bring mechanics of state institutions affected by the Insanity Law, Sections 49 and 50, and the State Finance Law, Section 17, within the eight-hour law beyond a shadow of doubt, one way of accomplishing the result would be by amendments to the Insanity Law, the State Finance Law and the State Charities Law. This might be more effective than to attempt to amend the Labor Law, though that could be undertaken also.

APPLICATION OF THE EIGHT-HOUR LAW (LABOR LAW, SECTION 3) TO STATE INSTITUTIONS

Court Opinions.— There are no court opinions. There have been no prosecutions of officers of state institutions for violations of the Labor Law, Section 3.

Attorney-General's Opinions.— The following opinions of the Attorney-General's office are pertinent:

1. Opinion of Attorney-General O'Malley, August 17, 1910.
2. Opinion of Attorney-General Carmody, July 3, 1913.
3. Opinion of Attorney-General Carmody, September 26, 1913.
4. Opinion of Attorney-General Carmody, November 12, 1913.
5. Opinion of Attorney-General Parsons, September 21, 1914.
6. Opinion of Attorney-General Parsons, November 20, 1914.
7. Opinion of Attorney-General Woodbury, November 8, 1915.
8. Opinion of Attorney-General Woodbury, March 25, 1915.
9. Opinion of Attorney-General Woodbury, January 29, 1915.
10. Opinion of Attorney-General Woodbury, March 23, 1916.

All of these opinions, with exception of the opinions dated September 26, 1913, September 21, 1914, and March 23, 1916, are to be found in the annual reports of the State Department of Labor. Copies of the September 21, 1914, and March 23, 1916, opinions are as follows:

OFFICE OF THE ATTORNEY-GENERAL

September 21, 1914.

Hon. Robert W. Hill, *Secretary, Salary Classification Commission, Albany, N. Y.*

My Dear Dr. Hill.— I acknowledge the receipt of your letter relative to the application of Section 3 of the Labor Law in regard to stationary firemen in state hospitals other than state hospitals for the insane.

After a rather careful examination of the Statute Law, it appears that the term "state hospitals" has never been definitely confined to the state asylums or hospitals for the insane. I believe that "state institutions" is a broader term and when used generally, applies to institutions like Raybrook, Craig Colony, St. Lawrence State Hospital as well as others not having hospital features. But the term "state hospital" may by its obvious application include state hospitals of all kinds, although I will confess that generally in its more common application it has been restricted to state hospitals for the insane. However, as I have said, the term has never received any definition in our Statute Law. The fact that "state institutions" and "state hospitals" are used in the same sentence in the law now considered might have some bearing if there were any reason for applying a definite restriction to the term "state hospital." I do not want to give to either term a fixed meaning, but it is my opinion that as used here, no distinction was made between the ordinary state hospitals and state hospitals for the insane. If any distinction was intended to be made between state institutions and state hospitals, it was that state institutions should include also those establishments of the state without hospital features.

Yours very truly,
JAMES A. PARSONS,
Attorney-General.

(Signed) By EDWARD G. GRIFFIN,
Deputy Attorney-General.

March 23, 1916.

V. T. HOLLAND, ESQ., *Assistant Secretary, State Industrial Commission, Albany, N. Y.*

DEAR SIR.—I have your letter of March 21, 1916, inquiring whether assistant engineers employed in the Craig Colony come within the rule of section 3 of the Labor Law, prohibiting more than eight hours work except in emergency.

Section 3 of the Labor Law as amended by chap. 494 of the Laws of 1913, provides in part as follows:

> Eight hours shall constitute a legal day's work for all classes of employees in this state except those engaged in farm or domestic service unless otherwise provided by law. * * * Nothing in this section shall be construed to apply to stationary firemen in state hospitals, nor to other persons regularly employed in state institutions except mechanics. * * *

It is clear that Craig Colony is a "state institution" within the definition of that term adopted by the various attorneys general in construing this section of the Labor Law, and within the tests applied in *Matter of Burns* vs. *Fox*, 98, A. D. 507.

That mechanics employed in state institutions are protected in their hours of labor as well as in their right of compensation by section 3 of the Labor Law, was held by Attorney-General Carmody in an opinion dated July 3, 1913 (Report of the Attorney-General, 1913, page 453).

That an assistant steam engineer is a "mechanic" within the meaning of section 3 of the Labor Law was also determined by Attorney-General Carmody in an opinion dated November 12, 1913 (Report of the Attorney-General, 1913, page 656). He there held that in state hospitals the employees in the engineer's department, except the chief engineer, are mechanics. There is no reason for a different rule in the Craig Colony.

I therefore advise you that the operation of a power plant with two shifts of twelve hours each is in contravention of section 3 of the Labor Law.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By J. S. Y. IVINS,
Deputy Attorney-General.

BUREAU OF EMPLOYMENT

The work of the Bureau of Employment has proven of increasing value to the State. Although the past year has been one of abnormal industrial activity and unemployment has been reduced to a minimum, the number of persons for whom jobs have been procured has increased, and employers seeking help have been put in touch with people competent to fill their positions. Advisory committees have been formed in the cities where branch employment offices are maintained and the effort has been to obtain and merit the confidence of the public. Employers have increasingly given the bureau opportunities to supply skilled help and even in some cases to fill technical or professional positions. Nothing could be further from the Commission's conception of the proper function of the Employment Bureau than that it exists only to supply cheap labor and that it caters only to the "down and out."

In our last report we called attention to the need for establishing additional employment offices. Although the funds have not been provided to establish new offices, yet through the generous assistance of public spirited citizens in their communities, it has been possible to open small offices, under the charge of one Assistant Superintendent, in Auburn, Oswego, the Williamsburgh section of Brooklyn, and in Long Island City. In these cases the department has furnished one employee from the force of the larger offices, while office space and financial assistance have been rendered by the local chambers of commerce or other public associations.

The Commission desires to call attention to the need, in connection with the Employment Bureau, of establishing juvenile placement divisions. The ranks of the workers of the State are recruited each year by large numbers of youths and girls with whom the matter of employment is purely haphazard or chance. Every person is better fitted for some tasks than for others. No account is ordinarily taken of the beginner's special aptitude for any given job. The boy with mechanical genius is too often found working as a delivery boy for the corner grocery, instead of learning a skilled trade where the wages are good and chances of steady employment exeellent. The inviting sign "Boy wanted" has too often been the determining factor in a boy's future usefulness, and seldom has that sign marked the gateway to success.

Vocational guidance is necessary if the State and the individual are to reap the full benefit of special talents or adaptability of the individual. It is respectfully urged that now is the logical and proper time for New York State to take a long forward step in this direction by providing means for a juvenile placement bureau.

BUREAU OF INDUSTRIES AND IMMIGRATION

The work of this bureau, under the limited appropriations allowed to it, has been very largely directed to the protection and supervision of the alien population resident in the State. Immigration has been at the lowest limit reached in many years. This would seem, however, to be the proper time for farsighted study of the immigrant problems and preparation for the great stream of immigration that will undoubtedly turn to our shores after the conclusion of the devastating war raging in Europe.

While immigration from Europe has dropped to a low limit, there has been a very apparent increase in the number of laborers from the Spanish speaking countries to the south of us and these have called for the special watchfulness of the bureau.

INDUSTRIAL CODE

Good progress has been made in the work of the Industrial Code. While for a time the work of the deputy commissioners in this bureau was very largely taken up with the consideration of petitions for variations from the law, since that work in the city of New York has been transferred to the city authorities, the bureau has begun earnest work on a number of codes. Volunteer advisory committees have been formed to work out various codes. The following codes are now well under way: Steam boilers, mines, quarries, heating, lighting and ventilation, dangerous trades, aisles in factories, and dangerous machinery. Consideration of the code for steam boilers is practically completed, and that code will doubtless be adopted in the near future.

Special comment upon the work of the other bureaus is not deemed necessary at this time. Reference to the separate bureau reports submitted herewith is respectfully invited.

Appended hereto and made a part hereof is a statement of the finances of the Commission.

Respectfully submitted,

JOHN MITCHELL,
Chairman,
LOUIS WIARD,
Commissioner,
EDWARD P. LYON,
Commissioner,
JAMES M. LYNCH,
Commissioner,
HENRY D. SAYER,
Commissioner.

STATEMENT OF APPROPRIATIONS, PAYMENTS MADE AND EXPENSES, NINE MONTHS ENDED JUNE 30, 1916

APPROPRIATIONS

Unexpended balances, September 30, 1915:		
General appropriation	$228,629 10	
Special appropriation	712 01	
		$229,341 11
Appropriation, L. 1915, Ch. 725		1,000,000 00
Total		$1,229,341 11

PAYMENTS MADE

October, 1915	$87,464 30	
November, 1915	105,878 78	
December, 1915	109,133 75	
January, 1916	107,652 29	
February, 1916	105,639 74	
March, 1916	106,675 34	
April, 1916	90,884 46	
May, 1916	126,096 68	
June, 1916	105,236 91	
		944,662 25
Cash balance, June 30, 1916		$284,678 86
Subsequent payments	$107,781 86	
Requisitions outstanding	7,687 18	
		115,469 04
Returnable to State Treasurer or for reappropriation		$169,209 82

EXPENSES*

October, 1915	$92,583 43	
November, 1915	106,361 24	
December, 1915	104,160 67	
January, 1916	102,147 90	
February, 1916	97,139 98	
March, 1916	112,571 63	
April, 1916	106,897 75	
May, 1916	106,450 81	
June, 1916	115,109 13	
		$943,422 54
Unaudited vouchers and open requisitions		47,790 72
Total expenses		$991,213 26

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* Includes payrolls and vouchers audited in each month.

CLASSIFIED EXPENSES BY

Bureau or Division	Salaries	Special services	Traveling	Postage
Administration				
General	$40,193 23	$56 03	$4,700 16	$269 87
Albany	3,058 32	....	90 91	87 33
Legal Division	26,772 11	134 37	1,991 75	225 40
Bureau of Secretary	25,181 39	955 28	520 17	407 91
Bureau of Secretary — Albany	7,795 83	....	92 21	143 51
Division of Cashier	9,190 25	....	51 93	649 22
Division of Accounts	11,451 03	....	92 65	42 25
Total — Administration	$123,642 16	$1,145 68	$7,539 78	$1,825 49
Bureau of Workmen's Compensation				
General	$13,481 93	....	$421 62	$188 62
Brooklyn Office	5,880 86	....	114 57	92 28
Albany Office	4,387 49	....	478 19	718 10
Syracuse Office	6,222 51	$62 00	677 36	194 50
Rochester Office	5,000 00	20 00	596 99	156 00
Buffalo Office	5,216 52	243 20	309 54	109 70
Division of State Insurance Fund	$90,824 40	$15,406 84	$3,547 80	$7,186 53
General	$67,081 92	$14,832 10	$3,003 47	$7,186 53
Subdivision of Actuary	12,442 48	....	25 10	....
Subdivision of Inspection	8,258 33	....	519 23	....
Medical Subdivision	3,041 67	574 74	....	....
Division of Claims	$65,155 99	$22 30	$386 74	$5,958 94
Division of Claims — Albany	19,310 36	....	590 61	1,824 60
Medical Subdivision	6,165 00	1,168 00	685 97	35 09
Total for Bureau	$221,645 06	$16,922 34	$7,809 39	$16,464 36
Bureau of Inspection				
General	$6,315 00	$939 95	....	$13 02
Division of Factory Inspection	$159,257 19	$2,370 97	$25,446 43	$1,985 79
General	$95,049 16	$2,370 97	$11,258 73	$1,218 29
Albany Office	26,698 25	....	6,482 63	608 50
Utica Office	14,506 45	....	3,939 95	....
Rochester Office	10,425 00	....	2,088 24	90 00
Buffalo Office	12,578 33	....	1,676 88	69 00
Division of Homework Inspection	$18,814 19	....	$2,972 38	$127 33
Division of Mercantile Inspection	23,871 18	....	4,015 26	277 37
Division of Industrial Hygiene	31,173 49	....	5,065 89	8 05
Subdivision of Engineering	8,537 81	....	92 83	14 88
Subdivision of Engineering — Albany	3,475 00	....	88 10	153 57
Total for Bureau	$251,443 86	$3,310 92	$37,680 89	$2,580 01
Bureau of Employment				
General	$5,050 83	....	$472 22	$158 36
Brooklyn Office	9,435 69	$15 50	21 00	100 25
Albany Office	3,126 26	....	....	60 74
Syracuse Office	5,220 33	....	63 03	52 00
Rochester Office	4,455 91	....	....	70 55
Buffalo Office	4,236 08	....	2 12	37 19
Total for Bureau	$31,525 10	$15 50	$558 37	$479 09
Bureau of Statistics and Information				
General	$3,675 00	....	$445 24	$578 34
Division of General Labor Statistics — Albany	9,312 07	....	1,033 57	....
Division of General Labor Statistics — New York	9,825 00	....	518 77	....
Division of Industrial Directory	3,358 95	....	....	....
Division of Industrial Accidents and Diseases	7,378 23	....	32 00	....
Division of Special Investigations	5,850 00	....	177 26	....
Division of Bulletin and Publicity	1,787 61	....	984 84	20 30
Total for Bureau	$41,186 86	....	$3,191 68	$598 64

BUREAUS AND DIVISIONS

Printing	Stationery and office supplies	Rent	Telephone and telegraph	Miscellaneous	Books, etc.	Furniture and fixtures	General office supplies	Total
$582 00	$147 22	$2,367 85	$405 44	$626 58	$27 00	$2,207 00	$6 25	$51,588 63
371 55	....	....	73 67	60 60	7 34	8 00	....	3,752 12
866 34	732 21	1,570 51	285 33	248 68	851 50	598 00	16 29	34,242 49
655 96	1,289 38	2,597 79	456 68	1,005 14	225 00	5,031 86	12 17	38,398 68
2 00	36 50	....	154 26	340 18	235 63	266 70	....	9,086 82
352 96	238 08	459 07	83 00	315 68	6 00	20 35	71	11,367 25
1,356 89	269 51	760 69	145 47	192 02	....	177 78	11 15	14,489 44
$4,187 70	$2,712 90	$7,755 91	$1,603 85	$2,788 23	$1,352 47	$8,324 69	$46 57	$162,925 43
$931 78	$137 35	$1,929 72	$196 54	$10 25	$7 00	$330 66	$3 00	$17,658 47
35 00	64 06	800 00	242 45	63 60	....	....	....	7,292 22
59 00	692 40	1,250 00	113 10	268 83	4 00	13 85	50	8,015 46
45 30	32 55	686 64	96 71	76 29	....	....	1 60	8,095 46
41 30	88 50	640 00	398 54	190 86	9 00	186 23	8 25	7,279 67
88 25	158 32	832 00	209 65	27 65	7 00	111 78	....	7,313 56
$12,485 92	$2,641 64	$6,855 61	$566 91	$2,029 74	$322 60	$6,878 86	$167 79	$145,254 64
$12,126 78	$1,819 27	$6,517 35	$379 99	$1,732 73	$221 15	$3,506 47	$155 34	$118,563 10
159 44	103 56	338 26	47 74	216 06	16 75	244 17	8 40	13,601 96
171 84	82 36	....	45 61	23 00	39 00	2 80	30	9,142 47
27 86	36 45	....	33 57	57 95	45 70	125 42	3 75	3,947 11
$6,134 97	$3,125 32	$3,068 53	$412 46	$1,158 29	$4 45	$1,746 32	$65 45	$87,239 76
1,172 07	224 12	250 00	37 72	362 62	....	175 43	2 40	23,950 53
78 42	141 82	531 56	76 94	76 13	47 45	205 58	15 15	9,227 11
$21,122 61	$6,706 08	$16,844 06	$2,291 02	$4,263 66	$401 50	$6,597 66	$259 14	$321,326 88
$662 21	$6 59	$1,399 91	$111 25	$0 36	....	$374 15	$721 00	$10,543 44
$4,578 62	$1,618 79	$2,663 66	$491 27	$698 01	$410 00	$2,444 14	$286 09	$202,250 96
$2,949 22	$1,223 46	$2,488 66	$245 56	$402 21	$406 00	$1,890 81	$274 49	$119,777 56
1,571 50	351 18	....	161 32	222 31	....	268 03	3 25	36,366 97
24 50	24 55	175 00	77 58	61 24	4 00	96 60	2 65	18 912 52
11 95	19 30	....	25	10 00	....	96 60	....	12,741 34
21 45	30	....	6 56	2 25	....	92 10	5 70	14,452 57
$1,260 00	$163 22	$676 53	$44 64	$66 77	$7 12	$44 64	....	$24,176 82
1,366 44	224 78	700 69	60 06	146 92	....	75 42	$7 09	30,745 21
133 25	64 51	....	100 79	186 93	98 70	965 79	24 02	37,821 42
76 91	2 42	169 13	36 64	2 34	18 00	39 60	....	8,990 56
37 68	159 74	....	50 18	25 11	....	36 47	....	4,025 85
$8,115 11	$2,240 05	$5,609 92	$894 83	$1,126 44	$533 82	$3,980 21	$1,038 20	$318,554 26
$775 49	$66 10	$508 27	$75 03	$59 76	$14 00	$37 76	$0 45	$7,218 27
118 45	180 32	1,125 00	355 59	511 62	....	144 25	9 02	12,016 69
156 51	112 44	....	96 98	236 31	....	124 65	....	3,913 89
105 42	89 79	450 00	144 04	228 10	3 60	99 30	1 50	6,457 11
73 10	113 18	660 00	100 95	173 29	4 00	482 99	7 15	6,141 12
50 11	86 52	905 00	138 53	248 24	....	193 54	1 50	5,898 83
$1,279 08	$648 35	$3,648 27	$910 12	$1,457 32	$21 60	$1,082 49	$19 62	$41,645 91
$3,623 99	$60 02	....	$166 88	$874 12	$2 00	$433 00	$0 15	$9,858 74
2,618 88	62 24	....	15 77	64 70	....	25 27	7 34	13,139 84
91 50	40 86	$338 26	33 50	87 22	....	112 25	89	11,048 25
120 88	5 62	....	18 38	16 34	....	....	7 35	3,527 52
55 28	19 20	....	3 46	48 60	....	9 10	2 40	7,548 27
8 50	12 08	....	35	20 76	43 50	....	....	6,112 45
2,866 19	1 86	....	15 76	6 92	....	3 00	....	5,686 48
$9,385 22	$201 88	$338 26	$254 10	$1,118 66	$45 50	$582 62	$18 13	$56,921 55

CLASSIFIED EXPENSES BY BUREAUS

BUREAU OR DIVISION	Salaries	Special services	Traveling	Postage
BUREAU OF INDUSTRIES AND IMMIGRATION				
General	$17,270 28	$10 00	$1,737 22	$90 78
Buffalo Office	1,886 90	....	52 02	30 00
Total for Bureau	$19,157 18	$10 00	$1,789 24	$120 78
BUREAU OF FIRE HAZARDS, BOILERS AND EXPLOSIVES	$14,304 35	....	$7,985 50	$178 00
BUREAU OF MEDIATION AND ARBITRATION				
Albany Office	$8,287 50	....	$1,726 06	$68 58
New York Office	3,600 00	$6 00	557 54	....
Total for Bureau	$11,887 50	$6 00	$2,283 60	$68 58
BUREAU OF INDUSTRIAL CODE	$11,609 95	$44 40	$1,077 44	$34 86
BUREAU OF PRINTING	5,615 81	....	9 90	2,528 00
GENERAL	....	250 00	100 00	50 00
Grand Total	$732,017 83	$21,704 84	$70,025 79	$24,927 81

AND DIVISIONS — (*Concluded*).

Printing	Stationery and office supplies	Rent	Telephone and telegraph	Miscellaneous	Books, etc.	Furniture and fixtures	General office supplies	Total
$478 79	$137 09	$2,313 90	$138 98	$425 40	....	$498 70	$21 57	$23,122 7
51 04	9 15	280 00	50 50	12 00	....	....	....	2,371
$529 83	$146 24	$2,593 90	$189 48	$437 40	....	$498 70	$21 57	$25,494
$339 74	$59 38	....	$43 92	$105 96	....	$163 96	$29 50	$23,210 31
$61 36	$16 74	....	$52 48	$27 68	....	$8 35	$1 50	$10,250 2
....	....	$193 29	34 42	10 21	....	45 73	....	4,447 1
$61 36	$16 74	$193 29	$86 90	$37 89	....	$54 08	$1 50	$14,697 44
$195 39	$97 36	$1,401 38	$74 98	$155 26	....	$57 79	....	$14,748 81
3 25	61 55	....	16 97	117 36	....	110 00	$2 75	8,465 59
1,946 99	228 00	....	92 29	278 64	$275 00	1 84	....	3,222 76
$47,166 28	$13,118 53	$38,384 99	$6,459 46	$11,886 82	$2,629 89	$21,454 04	$1,436 98	$991,213 26

Part II

REPORT OF LEGAL BUREAU

REPORT OF COUNSEL TO THE COMMISSION

To the Industrial Commission:

I submit herewith a report of the work of the Legal Bureau from October 1, 1915, to June 30, 1916. During a part of that period, that is to say, from October 1, 1915, to January 1, 1916, the management of the Legal Bureau was under the direction of my predecessor, Jeremiah F. Connor, Esq. My appointment as counsel became effective on January 1, 1916.

At the time of my appointment the assistant counsel in charge of the prosecutions for violations under the Labor Law had his office in connection with certain bureaus of the Labor Department at 381 Fourth avenue. There was some delay in the actual consolidation of the offices due to the fact that the new building in which the offices of the Commission are located was not ready for occupancy and it was not until about March 1, 1916, that the various divisions of the Legal Department were consolidated in the same offices. Until that time it was impossible to reassign the work of the Legal Department, but shortly after March 1st the bureau was organized on the basis upon which it has since conducted its work.

The work of the Legal Bureau is of a varied nature. It is called upon to give advice to the Commission and to the heads of the various bureaus, and to act as counsel for the Commission in all of its varied activities. There are two distinct general branches, however, of the work — one relates to the enforcement of the Labor Law and the other to the administration of the Workmen's Compensation Law.

To the first assistant counsel, under the supervision of counsel, is assigned the duty of attending to prosecutions for violations of the Labor Law. The prosecutions for violations of the Labor Law relate to a large number of different matters, such as failure to provide proper sanitary conditions, including failure to provide proper toilet facilities, cleanliness and repair of workrooms, halls, etc.; ventilation and heating of factories and workshops; those relating to accident prevention, such as the failure to properly guard elevators and hoist ways or to safeguard machinery; those relating to structural conditions in factories, such as failure to require proper means of exit; violations of the law in reference to employment of children, and of women and minors and a large number of miscellaneous matters, such as failure to comply with one day of rest law, or to provide first aid appliances, etc. In the nine months period which this report covers there were 2,483 prosecutions of various provisions of the Labor Law instituted. Of this number 454 were dismissed, withdrawn or acquitted; 1,592 convictions were had and 436 were not disposed of on July 1, 1916.

The work of this bureau in connection with the compensation cases consists in writing opinions in cases that are referred to the Legal Department for opinion of counsel; the preparation of "conclusions of fact" and "rulings of law" under the statute in cases in which notices of appeal have been served from awards and decisions made by the Commission; the service of such findings upon the parties in interest; the preparation of cases on appeal from the awards or decisions made by the Commission; assistance rendered the Attorney-General in the argument of the cases before the appellate courts; the collection of awards in non-insurance cases; the collection of penalties for failure to secure compensation in the methods prescribed by statute and a large amount of correspondence with parties who communicate with the Commission relative to the interpretation of the law or in reference to pending cases.

In the period which this report covers there have been 270 cases referred to this Bureau, in which appeals have been taken from the awards made by the Commission. The following table shows the disposition of cases appealed to the Appellate Division of the Supreme Court during the nine months period covered by this report:

Appeals withdrawn	62
Claim disallowed on rehearing	5
Appeals held in abeyance in railroad cases pending the decision in case of Winfield vs. New York Central Railroad Company	79
Awards affirmed	61
Cases remitted to the Commission for further findings	3
Awards reversed and cases remitted to the Commission	2
Pending and undisposed of	42
Dismissals	2
	270

In addition to the above, there were 30 cases appealed from the Appellate Division to the Court of Appeals, 7 of which are held in abeyance pending the decision of the Winfield and other cases pending in the United States Supreme Court, and the disposition of the remaining cases is shown by the following table:

Awards affirmed	12
Awards reversed	9
Undecided	2
	23

Some of the cases above referred to were decided after June 30, 1916, but in order to account for the cases that were appealed I have completed the record by showing the disposition of all cases in which appeals were taken between October 1, 1915, and June 30, 1916.

The following table shows the disposition of the cases during the period covered by this report, which were pending on appeal on October 1, 1915.

Awards affirmed in which appeals were taken prior to October 1, 1915	53
Awards reversed	8
Awards reversed and remitted to the Commission	3
Awards remitted to the Commission for further findings	2
Appeals withdrawn	5
Appeals awaiting United States Supreme Court decisions	63
	133

It may be of interest to state that at the present time there are pending on appeal 401 cases, 195 of which are held in abeyance pending the decision of the Winfield and other cases in the United States Supreme Court involving the constitutionality of the Workmen's Compensation Law, especially as the same applies to interstate railroad carriers and to admiralty cases.

The following table summarizes the work of the Collection Department:

Cases referred for collection of awards	940
Cases disposed of	692
Judgments obtained	202
Cases undetermined	248
Amounts collected	$12,801.69

Owing to the large number of cases pending and the rapid increase in the amount of work thereby entailed, it was found necessary to install an entirely new system for keeping the records of the office. A new system has been inaugurated which has proven to be a great labor and time saving device.

The correspondence of the Bureau is exceedingly heavy. Each day we receive a large number of letters relative to pending cases and general miscellaneous correspondence from employers and employees asking for interpretation of the various provisions of the law and its application to different lines of employment. We also daily have a number of claimants call for information relative to pending cases and other matters. Many of the cases have involved new and novel questions of law, but no good purpose will be served by a discussion of those questions at this time.

The above and foregoing is intended to give a summary review of the character and extent of the work of this Bureau.

ROBERT W. BONYNGE,
Counsel to the Commission

PART III

REPORT OF BUREAU OF INSPECTION

(1) REPORT OF FIRST DEPUTY COMMISSIONER

(In Charge of Bureau of Inspection)

To the Industrial Commission:

In submitting this report, for the fiscal year 1915–1916, it must be understood that it only covers the period of nine months from October 1, 1915, to June 30, 1916. This was made necessary due to the enactment of chapter 118 of Laws of 1916, which changed the beginning of the fiscal year to July 1st instead of October 1st.

There is herewith submitted with this report, and appended thereto, the reports of the chiefs of the several divisions of the Bureau of Inspection, and attached are the statistical tables showing in detail the work performed by each division.

MERCANTILE INSPECTION

Appended hereto is the report of the Division of Mercantile Inspection, which shows the work of that division in detail. The work performed by the division shows splendid results and necessitated much hard work. The laws enacted impose a task on the Bureau beyond the capacity of the present force of inspectors, and I renew my recommendation that the number of inspectors be increased.

The mercantile law has been enacted and enforced for a sufficient number of years to establish clearly its benefits to the workers employed in the places to which the law applies. It should be extended so as to make all of its provisions apply to all employments enumerated in section 161. Every effort should be made to include restaurants in the provisions of the law. I reiterate all I have said formerly regarding restaurants. The fact cannot be disputed that the large number of females employed in restaurants are compelled in most instances to work long hours for seven days. Their work is laborious, fatiguing and productive of physical ailments.

There are many reasons that can be advanced regarding the advisability of extending the jurisdiction of the Mercantile

Bureau, relative to the enforcement of the law in all cities of the State. The authority to enforce the law in the State, outside of first and second class cities is vested in the health officers of the cities, towns and villages, and owing to numerous other duties imposed on the health officers there is practically no enforcement of the mercantile law.

Many of the larger mercantile buildings contain much machinery, elevators and hoistways which are productive of many injuries. Added to this is the fire hazard and inadequate exits. Many of the mercantile buildings have a very large occupancy, thus making the hazard even greater than the average factory building.

The provisions of section 20-b give the Industrial Commission power to make rules to apply to all of the conditions mentioned, and I would suggest that such rules be provided so as to enable the Inspection Bureau to correct some of the existing conditions.

I heartily approve of the recommendation made by the Chief Mercantile Inspector in regard to amending section 93, so as to prohibit the employment of children under 16 years of age where malt or alcoholic liquors are sold, and in connection with the recommendation would suggest that the Commission consider the advisability of amending the section so as to apply to any employment where children would be affected by lead poisoning or any other occupational disease, or where narcotic drugs are sold or packed or used in the process of the industry, or in any electrical work of a dangerous character.

HOMEWORK INSPECTION

Appended hereto is the report of the Chief of the Homework Division. This report shows the excellent work accomplished by the division during the year. It is gratifying to note the improvement relative to work in tenements. Such results were accomplished only by hard work and persistent effort.

Attention is called to the child labor problem as it relates to tenement inspection. Appended to this report is a statistical table relative to the 471 children found working in the homes.

I concur in the recommendation of the Chief of the Division that the provisions of the law be extended to all classes of dwellings wherein such work may be performed, and I submit that the law at present discriminates between the tenement house and the one or two-family houses, where the conditions may be unsanitary or wherein children may be employed, and the law does not reach such conditions.

I also desire to renew my recommendation of last year relative to the necessity of providing for an increase in the number of inspectors in order to properly perform the work as the statutes require.

INDUSTRIAL HYGIENE

The Division of Industrial Hygiene has made many investigations during the fiscal year, one of which was a complete survey of the chemical industry. There were numerous physical examinations made of factory employees, both male and female.

In addition to the above work there were many air tests made in factory and mercantile establishments relative to ventilation and the removal of gas and fumes.

The work of the division has been performed in a very satisfactory manner.

LABOR LAW ENFORCEMENT

Appended are the statistical tables setting forth the work performed by the Division of Factory Inspection.

The duties imposed on the inspection bureau by the provisions of the Labor Law are varied and numerous. In addition to the regular inspectors of factories, mercantile establishments and tenement work, the bureau is compelled to make special inspections and investigations. The day of rest law must be enforced in factories and mercantile establishments throughout the State. This requires the inspection force to work on Sundays to enforce its provisions.

The investigation of conditions relative to night work and overtime work for children and females entails considerable night work on the part of the inspectors. It should be borne in mind that the inspectors are required to secure proper evidence relative to all violations submitted to the courts, and, in addition, they have to secure and serve the summons issued against violators of the law, and are required to be in attendance at the sessions of the court when those against whom they have alleged complaints for violations are either arraigned or tried, in order to present their evidence in the prosecution instituted by the Department of Labor.

In view of all the various duties which are essential to enforce properly the provisions of the law, it is very evident that the inspection force is not adequate, and I desire to call attention again to my recommendation of last year relative to the question of the law and its enforcement, as follows:

> As the statute stands at present, the inspection force is not adequate to properly enforce the Labor Law, and in this connection permit me to call attention to the experience of the Department since its inception. At no time has the inspection force been adequate to properly enforce all the laws the Department is charged with enforcing. This is true at present and has been so in the past. The law-making bodies have from time to time added many beneficial statutes to what are known as the Labor Laws, but at no time have they increased the agency for enforcement to a point that would be adequate to the duties imposed on the Department as the result of the enlarged responsibilities because of the statutes added from time to time.
>
> The time has arrived for the Commission and the Legislature to give serious thought to the question of providing an adequate force to perform the duties imposed on the Industrial Commission. With the development of the present laws and the powers vested in the Commission to establish codes and make standards applicable to the industries of the State, there can be splendid progress made for the protection of the working people of the State which will result in reducing the number of deaths and injuries of those engaged in the industries, and reduce to a minimum the hazards of the various industries in the State of New York.

EXITS FROM BUILDINGS

During the nine months of the present fiscal year, there has been considerable improvement in the number of compliances secured relative to exits from buildings. Two thousand two hundred and thirty-two orders were issued for additional means of exit, and 2,937 compliances secured. There were 18,433 fire protection orders issued pertaining to factories of the State, and 22,699 compliances secured. The improvement was the result of the vigorous policy instituted by the inspection bureau, relative to demanding compliance with the orders within a specified time, making reasonable allowance for the length of time necessary to perform the work, or make the necessary structural changes, as required by the Labor Law. Delay was the policy pursued by many owners of buildings, thus necessitating the sending of thousands of prosecution notices in which a final date for compliance was given. Nevertheless, we were compelled to institute 1,111 prosecution for the nine months, against 215 for the same period the year previous. Thus it will be seen that it was necessary to institute more than five times as many prosecutions in order to impress on owners of property that the provisions of the Labor Law relative to safe exits should be complied with.

ACCIDENT PREVENTION

When we realize that upward of three hundred thousand industrial injuries were reported to the Industrial Commission for the past year, resulting in a loss of many millions of dollars to the workers and the industries of the State, it is essential that the facts be presented by the Industrial Commission to the Legislature, in order that they may give serious attention to the advisability of providing a force of inspectors adequate to cope properly with the existing conditions in industry, with the aim of making the industries of the State safe and thus protecting the workers therein from preventable or unnecessary injuries.

If the inspection force were increased in proportion to the duties imposed by law, there could be splendid progress made in behalf of those engaged in industries of the State. It is estimated that industrial injuries cost the employees and employers approximately thirty million dollars per year. Much of this loss is unnecessary. While many industrial injuries are inherent to industry, more than half are preventable and, therefore, unnecessary. For this reason it would be good business for the State to appropriate the necessary money to enable the Industrial Commission to reduce the enormous number of industrial injuries reported, and the large economic loss they entail. This would be work worth while, for it would eliminate much human suffering and misery which has to be borne by the injured and their dependents.

In view of the number of industrial injuries reported, the inspection force was directed to pay particular attention to the safeguarding of machinery in the industrial plants of the State, and it is gratifying to report that considerable improvement has been accomplished in this important line of work. There were issued during the nine months more orders for accident prevention than were issued for the same period of the previous year.

There was considerable gain made relative to securing compliance with orders for accident prevention, the compliances secured in the nine months being 41,634, as compared with 29,375 for the same period of the year previous. We secured a greater number of compliances for accident prevention than the number of orders issued in the nine months, thus making considerable headway on the number of orders issued during the previous year. In this connection it may be advisable to call attention to the fact that the results accomplished relative to orders regarding accident prevention were through the liberal use of our machinery tagging notice, which is used when orders to provide safeguards are not complied with when the first compliance visit is made. Then the firm is notified that such safeguards must be provided by a specified date, or an unsafe tag, as provided in section 81 of the Labor Law, will be attached to said machine, prohibiting its use until the same is made safe. While we have used a large number of "unsafe" tagging notices, we were compelled to apply the "unsafe" tag in but a comparatively small number of instances. The excellent effect of the notice and the application of the "unsafe" tag, is reflected in the small number of prosecutions relative to accident prevention. We found it necessary to begin 202 prosecutions for failure to provide safeguards; in view of the large number of orders issued and the compliances secured, it is a comparatively small number.

PROSECUTIONS

Accompanying this report are tables which set forth in detail the prosecutions instituted by the Factory and Mercantile Divisions for violation.

On September 30, 1915, 176 factory cases were pending. During the nine months to June 30, 1916, there were 1,742 cases begun. There was a total of 1,506 cases disposed of during the nine months ending June 30, 1916, with the following results: Dismissed, withdrawn or acquitted, 516; convicted, 990; sentence suspended, 620; fined, 370; amount of fines, $9,835. In addition to the above cases, there were 16 violations coming under article 2 of the Labor Law, which were referred to the district attorneys of the counties in which violations occurred. Five of the sixteen cases were disposed of with the following result: Dismissed or acquitted, 2; convicted, 3; sentence suspended, 1; fined, 2; amount of fines, $21, making a total of $9,856 imposed in fines for factory violations.

On September 30, 1915, there were 43 mercantile cases pending. During the nine months, to June 30, 1916, 741 cases were begun. There was a total of 746 cases disposed of during the nine months ending June 30, 1916, with the following result: Dismissed, withdrawn or acquitted, 42; convicted, 704; sentence suspended, 433; fined, 271; amount of fines, $5,740. In addition to the above cases, there were 125 violations coming under article 2 of the Labor Law, which were referred to the district attorneys of the counties in which violations occurred. Ninety-four of the 125 cases were disposed of with the following result: Dismissed or acquitted, 4; convicted, 90; sentence suspended, 39; fined, 51; amount of fines, $1,050, making a total of $6,790 imposed in fines for mercantile violations.

An analysis of the figures shows that of the 2,351 cases for violations of the Labor Law disposed of during the nine months ending June 30, 1916, there were 564 cases dismissed, withdrawn or acquitted; 1,787 were convicted; 1,093 were given suspended sentences; 694 were fined. There was $16,646 imposed in fines.

During the previous fiscal year, 1915, there were 845 factory violation cases disposed of, with fines aggregating $4,387, and 876 mercantile violation cases, with fines aggregating $5,842, making a total of 1,721 violation cases disposed of during the year, with fines amounting to $10,229.

In the nine months of the fiscal year there were 1,923 factory violation cases disposed of, with fines aggregating $9,856, and 840 mercantile violation cases, with fines aggregating $6,790. Thus it will be seen that in the nine months of this fiscal year there were 2,763 prosecutions disposed of, being 1,042 in excess of the twelve months of the year previous. The total of $16,646 collected in fines was $6,417 in excess of the $10,229 collected during the twelve months of the previous year.

	FISCAL YEAR 1915 (12 MONTHS)		FISCAL YEAR 1916 (9 MONTHS)	
	Prosecutions completed	Fines imposed	Prosecutions completed	Fines imposed
Factories	845	$4,387	1,923	$9,856
Mercantile establishments	876	5,842	840	6,790
Total	1,721	$10,229	2,763	$16,646

While these figures show considerable improvement for the nine months of the fiscal year 1916, it is very evident that the courts are far too lenient with the violators of the Labor Law. If many of the judges trying the cases presented by the Labor Department fully realized their responsibility, as imposed on them by the provisions of the law, the work of the inspection force would be lessened to a considerable extent. There would be a far greater respect for the law and the orders issued by the department. The policy of the department is not to begin a prosecution until orders have been issued, and it is clearly demonstrated that persons receiving such orders have failed to comply, and to prosecute is our last resort. This policy is pursued excepting regarding violations relative to illegal hours, or employment of children. Notwithstanding this policy the courts are far too lenient with violators who deliberately violate the law. If the courts were more keen to impose the penalties provided in the law, the attitude of those who will not comply with the orders issued until taken to court would change. Such a policy would have a tendency to increase respect for the law and also to reduce the number of violations to be presented to the courts.

BUREAU OF INSPECTION, MONTHLY REPORT

Since the practice of publishing the monthly report of the Bureau of Inspection in the monthly Bulletin has been followed, there have been many expressions of satisfaction by those interested in the work of the bureau. Formerly there was much dissatisfaction because they were unable to familiarize themselves with what was being accomplished by the Bureau of Inspection. Formerly the work of the bureau did not appear in a detailed report until the year's work had been finished and the report published. This necessarily delayed the publishing of the details until the report was printed and distributed. If those interested will follow the figures given in these monthly reports, they will readily realize the large amount of work performed by the inspection bureau, and they will be able to see at a glance the details of this work. There is shown in this report the work for the month, also the amount of work accomplished for that period of the fiscal year reported to date, with a comparison of the same period of the year previous. While the form of reporting to the public monthly what has been accomplished by the Bureau of Inspection is giving satisfaction, it is the intention to improve the same as we progress with the work.

INDUSTRIAL CODE AND RULES

In the report of 1915 attention was called to the necessity of providing proper lighting facilities in industrial establishments, and the need for providing codes for safeguarding machinery, and the organization of safety committees. The work now in progress by the Bureau of Industrial Code, relative to the adoption of rules for mines and quarries, dangerous machinery, aisles in factories, artificial light, dangerous trades, will, when adopted, be of great assistance to the Bureau of Inspection in performing its duties in the multifarious classes of industry in this State. These rules should be carefully considered, so that their application will be practicable with the sole purpose of eliminating the hazards from the industries to which they apply, thus reducing as far as possible the number of industrial injuries.

BLOCK SYSTEM

A block system of making regular inspections has been devised and installed in New York City. While the preliminary work and all details in connection with the installation of such a system were completed during this report year, its operation was not begun until July 1st, the beginning of the fiscal year 1916–1917. This system will enable the inspection bureau to perform the regular inspection work in a systematic way, with a full knowledge of the percentage of territory that has been covered. If we are able to cover all of the territory within the city limits in the fiscal year 1916–1917, we will have a very complete record of the number and character of factory buildings and the number of factories located therein. This will render valuable service and will enable the Bureau to divide the work equally among the various supervising districts.

SAFETY MANUAL

Since my recommendation submitted in the 1915 report, relative to providing a safety manual, the Commission has authorized the compiling and printing of the same. There has been very little progress made owing to lack of sufficient appropriations. In all probability this difficulty will be overcome in the appropriation to be made at the next session of the Legislature.

In conclusion I desire to call attention to the numerous duties the law imposes on the inspection force and the manifold duties the average inspector has to perform.

I desire also to express appreciation of the excellent work performed by the office force and the inspection force in general, relative to the enforcement of the law and their various duties. The inspectors' work must be performed under many trying circumstances. The average manufacturer or merchant is none too willing to comply with the law's provisions, and in the course of the inspectors' daily routine of work they are apt to meet many persons who are not over agreeable to those who have issued orders in compliance with law. Such orders require them to make changes in connection with their establishment which will entail an expenditure of money or cause them to reduce the working hours of their employees. For these and other reasons the inspectors' work is not always performed under the most pleasant conditions.

Considering all an inspector is required to know regarding the labor laws and their application to the different industries, and the ability he should have or must acquire in order to be a good inspector, a judge of human nature, and successfully deal with the many different kinds of people he meets in the course of his daily duties, we must realize that the salary paid is not in keeping with the service required of the inspectors by the Industrial Commission, and I recommend that consideration be given the question that the salary be made commensurate with the duties required. This is essential in order that persons with practical knowledge and training may be attracted to the service. Because the present salary for first grade inspector is less than the salary paid many mechanics, these men are unwilling to accept employment with the State, and thus the State loses the services of persons whose practical training would fit them for the duties of an inspector. I trust that the Legislature may realize the necessity and the wisdom of providing for this increase of salary for the inspectors.

JAMES L. GERNON,
First Deputy Commissioner.

(2) REPORT OF DIVISION OF HOMEWORK INSPECTION

To the First Deputy Commissioner:

The annual report of the labors performed by the Division of Homework Inspection in the Bureau of Factory Inspection for the year ending June 30, 1916, is herewith respectfully submitted. This review of the work of the division embraces a period of only nine months, from September 30, 1915, to July 1, 1916. This fact is due to the change made in the fiscal year to July 1st instead of October 1st, as heretofore.

The records on file in the division for this period show that the 14 field workers assigned to tenement house inspection work performed the following duties: Inspected 14,719 licensed tenement houses; investigated 2,207 original applications for licenses for tenement houses; visited 1,905 tenement houses not licensed, but suspected of having work going on in them illegally; investigated 385 separate complaints against tenement house violations; made 3,847 compliance visits to tenement houses, and performed 4,449 other acts of a miscellaneous character, but all applying to the work of tenement house inspections; applied the tenement tag to 382 cases of flagrant violations of law; prosecuted 32 employers of homeworkers for violations of the Tenement House Act; reported 471 children found employed contrary to law in homes in tenement houses. As a result of reports filed by inspectors, 1,540 old licenses were cancelled for various reasons, while 9 licenses were revoked because of unsanitary conditions found existing in tenements to which they related. Eighty-seven applications for licenses were cancelled before the issuance of a license. These cancellations were due generally to imperfect information given at the time of filing the application.

For the nine months comprising this report, we found 14,974 living apartments used by homeworkers in which 17,344 persons were at work on articles coming under the law. There were 34 different races embraced in the 20,779 workers reported. Of this number, 10,641 were Italians, 6,367 were Jews, 1,140 were Germans, 1,093 were Americans, leaving 1,538 persons to be divided among the remaining 30 different races of persons found engaged in homework in this State. One thousand three hundred and sixty-nine shops coming under the provisions of section 100 of the Labor Law were found in tenements which gave employment to 3,435 persons, including the proprietors. These so-called tenement shops were mostly stores used for business purposes and having no connection whatever with living apartments; some few were apartments that were used entirely for business, no families living in them. Of the total of 20,779 persons found at work, 19,018 were employed on articles of "clothing" (16,145); "flowers" (1,380); "embroidery" (1,402); and "feathers" (91), leaving 1,761 to be charged to miscellaneous articles. These figures cover all work found in licensed tenement houses in this State coming under the law.

It is gratifying to be able to note the steady betterment surrounding this class of employment. The "shop" in living rooms by reason of the employment of outside help by the tenant worker therein has been eliminated. This was one of the most obnoxious conditions responsible for bringing the tenement house law into operation. To clean up this feature of the field work was a large task long drawn out and one difficult of accomplishment, but by persistent and insistent efforts the desired result has been obtained. In all the State there were found only 265 outside hands working illegally, nearly all of whom were temporarily employed on rush jobs by custom tailors, dressmakers, etc. The most obstinate and persistent violators of this feature of the law were not the homeworkers engaged on factory articles, but the homeworkers doing work for individuals commonly called custom work. This class of workers were most difficult to reach, because we could establish no touch with those furnishing the employment, and it was difficult to force the tenant worker to see how any law could be violated, simply because he or she "hired a few helpers" in the rush season. We cannot prevent a man from renting his house or parts of his house to persons who do work of a public character in their living rooms. We have power only to look after the conditions under which public work in the tenement home is carried on and regulate the conduct of such work, if such conduct is found to be in conflict with the statute. In the absence of a regular employer who controls the work done by a tenant, the enforcement of the regulations demanded by law becomes more difficult, yet, despite all obstacles arising from an imperfect law, improvement in the matter of the control of homework in all its features is noticeable.

The prevention of child labor in the home on factory work is a new problem, and at the present time is a very difficult problem for the inspector in the field to solve. Appended to this report is a table prepared by the Bureau of Statistics analyzing this subject, using as a basis the 471 children reported to this division as stated above. This table should prove of considerable interest. In the course of their labors, the field force found these children working in their homes on some articles coming under the provisions of section 100. The table contains detailed information as to age, sex, school attendance, time found at work and the particular article on which each child was found employed. It must not be understood that these little ones are employed on a wage basis in any sense. They are children at home helping the parents. The parent is the real employer, who, using his authority over the child, permits or forces the youngsters to do the work. In all of the revisits made to homes where these children were found at work, only 15 of the violations were found repeated by the same child in the same family. I credit this fact more to the co-operation of the employer in stopping the work to the parent, than to the efficiency of our patrol. Of the total of 471 children reported, 394 were found employed on flowers, pants, coats, embroidery, and feathers. Of the 394 so engaged, 300 were females and 94 males. Following is a notice in general use by factory employers, which is distributed by them to all their outside help:

> **This work is not to be made by children under sixteen years of age and if you are discovered having your small children helping you at any time by us or any Factory Inspector, you will be liable to arrest and will not get any more work from any shop in New York city.**

This notice is pasted on packages or boxes containing the material or articles taken by the homeworkers to their homes. This notice is printed in Italian as well as English and very plainly and forcibly warns the parent or adult homeworker, under penalty of the stoppage of all homework, against allowing in any manner his children to touch or help with the work so taken into the home to be made, altered, repaired or finished. In other lines of work a similar notice is placed in the work book held by the tenant worker. I insert here a letter to me on the same subject from a large employer of homeworkers:

DEAR SIR.— I am in receipt of yours of the 17th inst. and was not aware that any children were working at the stringing of beads that I gave out to Mrs. ———, who used to work for me before she got married. I have written to her a letter as per enclosed copy * and she responded this morning with a personal interview, stating that at the time your inspector called they were there by mere accident. However, I am the last one to give work to children and upon the promise of Mrs. ———, not to employ any children, I have given her work, being she informs me that it is part of her livelihood and as she has worked for me for quite some time, I do not wish to deprive her of same. I explicitly told her that I do not want any children near her when working. However, if at any time you inform me again that she allows children to help her in stringing beads I will immediately stop giving her work, as I can get along without her help.

Thanking you for calling my attention to same, I remain,

Very truly yours,

———.

*DEAR MADAM:

We are in receipt of a letter from the Department of Labor wherein they claim that you are employing Rose ———, 15 yrs., 11 mos.; Nicola ———, 13 yrs.; Maria ———, 9 yrs.; Picora ———, 12 yrs., in making up beads, and inasmuch as this is against the law, I am obliged to ask you to return all goods, finished or unfinished, and regret to say that we will not be able to give you any more work, as we do not know how to protect ourselves, unless you can suggest some way in which we can be secure, in not engaging minors without working papers.

Very truly yours,

———.

This letter is indicative of the attitude of manufacturers generally on the subject of child labor in the home; it also is indicative of the co-operation which the manufacturer willingly extends to this division in the performance of its work. I, therefore, think the letter and the notice are items of interest. In one instance where an employer was prosecuted and found guilty of employing directly two children under age to do work in their homes, the offender was given the maximum fine of $50 for a first offense. The number of children here reported are only those found by the inspectors in the ordinary course of their day's work. How many more may be employed in like manner, we do not know. That the number may be considerable we have from our experience cause to suspect. So far as the limited number of inspectors under our direction would permit, we have given special attention to those sections of the city where factory work is carried on in the tenement homes in greatest abundance, and among the people so engaged who we have reason to feel would use the labor of their children on articles taken into their homes. The subject of child labor in the home is important, and should be closely investigated, not only as it may apply to the tenement house, but to all houses, irrespective of the number of families living under the same roof. It is as great a detriment to the State and to society to have a child work in the home in the dwelling house as it is to work in the home in the tenement house. It is an act of discrimination on the part of the State, if not an act of injustice, to say to the family living in the three family house that no child under sixteen years of age can work therein, while the neighbor in the next house which may contain but one or two families can move along without legal molestation of any kind. The people we have to deal with cannot understand a law that can permit such evident discrimination.

In the enforcement of sections 101 and 106 of the Tenement House Law, the division has never been able to give to these two sections that close attention which the law seems to demand, nor can we do so with the present inadequate force of inspectors at our disposal. Section 101 in particular requires that for the purpose of certification prompt and close attention be given the matter of following up unlicensed houses shown on registers of outside homeworkers filed by manufacturers, contractors or other employers. All such lists should be followed up promptly in the field and not by correspondence from the office as is at present the case. I think it of interest to state here that we find some evidence that employers here and there are gradually withdrawing work from the home. This fact is noted in some localities where labor is well organized and has taken a pronounced public stand against homework in any form. They say they do not believe that the home should be made an adjunct to the factory.

During the nine months we notified 2,336 factory employers to comply with sections 101 and 106 of the law. We received replies from 1,459 firms. One hundred and sixty-one reported that they engage no outside help or homeworkers. Two hundred and ten notices were returned by the postoffice as "not found," 22 were returned as "removed," 413 permits were issued under section 106, while 272 permits were cancelled. This is very unsatisfactory.

I repeat my annual request that more inspectors be assigned to this division, in order that we may prosecute with some measure of thoroughness the duties now imposed by law on the Division of Homework Inspection. I repeat the suggestion made in my report two years ago, that the Bureau of Statistics and Information in this department be given ways and means and be directed to make a complete survey of the subject of home employment in this State. That such a survey extend and apply to all homes wherever work of a public character is carried on, whether it be in a tenement or a non-tenement house. In my judgment, there is no one industrial subject that would excite so large a measure of public interest as this one. Any report that could be made of homework conditions by this bureau, no matter how thorough we may endeavor to make it, would not even scratch the surface of homework conditions in this State, because of the incompleteness of the existing law on this subject. All the employees of the division working under my direction have been diligent in all respects in the performance of the duties they were charged to perform during the year. I am pleased to make acknowledgment of this fact and I am grateful to them all on this account.

DANIEL O'LEARY,
Chief of Division.

(3) REPORT OF DIVISION OF MERCANTILE INSPECTION

To the First Deputy Commissioner:

The report of the Division of Mercantile Inspection for the nine months ended June 30, 1916, is herewith submitted, to which is appended tables showing in detail the work of the division. On June 30, 1916, we completed the eighth year's work of the mercantile division. Notwithstanding the fact that the past fiscal year comprised but nine months, our record shows that the amount of work accomplished equals that of the preceding year which consisted of twelve months. The increased amount of work accomplished is largely due to the zealous efforts and unflagging interest of the efficient force of inspectors.

COMPLAINTS

One thousand one hundred and ninety-three complaints were received and investigated during the fiscal year 1915-1916, a marked increase over the preceding year. This demonstrates the fact that the present force of mercantile inspectors is insufficient to enforce properly the provisions of the mercantile and day of rest laws. In the appended table will be found a classification of complaints received.

CHILD LABOR

Our most vital problem is that of child labor, and the provisions of the child labor law are most difficult to enforce, as such labor is cheaper than any other, and many employers constantly take advantage of the fact and risk detection. The child labor problem does not now exist in the most important and reputable mercantile establishments, they having co-operated with the mercantile division to secure not only a legal, but a moral observance of the child labor law. But in spite of our utmost efforts there are still many violations of section 161 of the Labor Law, many children under fourteen years of age being found illegally employed, and others from fourteen to sixteen years of age working excessive hours and without the required certificate. This will continue until the force of inspectors is sufficiently increased to enable us to make regular and more frequent inspections of all places enumerated in section 161, and to keep pace with the greatly increased number of establishments coming under our jurisdiction. Where violations of the child labor law are brought to the attention of the courts, more respect for the law is created by imposing fines rather than suspended sentences.

The greater demand for labor of all kinds created by improved business conditions during the past year has increased the number of children employed, but the percentage of children illegally employed has decreased from 45.5 per cent to 36.1 per cent.

I would recommend that the Labor Law be amended to prohibit the employment of children under sixteen years of age in any establishment where malt or alcoholic liquors are on sale; this suggestion has been made previously.

HOURS OF LABOR FOR FEMALES

Second in importance to the child labor problem is sub-division 2 of section 161, relating to the hours of females in mercantile establishments. This has proved to be a most humane law, many thousands of women workers having benefited by its observance and enforcement. We continue to find violations of this law, principally among what are known as "community stores," owing to the inadequacy of our force which does not permit of the constant supervision this class of establishments require to obtain a proper observance of the law. There is still a large number of women workers unfortunately not included by the legislature in the provisions of this law, consequently they are obliged to work excessive and late hours. Among these are workers in business offices, restaurants, lunch rooms, theater, elevated, surface and railroad ticket offices, drug stores and telephone operators. I believe the benefits resulting from this humanitarian legislation are just as essential to the physical and moral welfare of females in the above enumerated establishments, as to those now receiving its benefits.

I would recommend that section 161 be amended to include females working in or in connection with these establishments.

If our laws were amended to require but nine hours of labor for females, same to be performed in twelve consecutive hours instead of the fifteen hours now permissible, it would further reduce the opportunities of unscrupulous employers evading the law.

MEAL TIMES

Subdivision 3 of section 161 permits employers to allow but twenty minutes supper time for their employees when working after 7 P. M.; this amount of time is wholly inadequate and should be extended to at least forty-five minutes.

SECTION 8-A

This section of the Labor Law has brought needed relief to many thousands of males employed in mercantile establishments, where seven long days of hard labor were formerly the rule and very little regard shown for the welfare of employees. Our limited force of inspectors prevents the frequent and systematic inspection of establishments operating on Sundays, which is necessary to a satisfactory enforcement of the law.

The necessity of one day's rest in seven is so undisputed and of such benefit to humanity, that I strongly recommend this admirable measure be amended to include within its scope all classes of employees now compelled to work seven days a week.

SANITATION

There is another class of establishments over which we have but limited jurisdiction, namely offices, where there is a necessity for supervision as in many cases the conditions relative to lighting, heating, ventilation and general sanitation are far from ideal, and the hours of labor are excessive. I would repeat the recommendations made last year, that our jurisdiction be extended to cover sanitary conditions and hours of labor in all establishments enumerated in section 161.

The mercantile division is still laboring under a great disadvantage in its efforts to secure compliance with orders issued relating to sanitary conditions. This difficulty arises from the fact that the law fails to place definitely the responsibility for compliance with either the owner or the tenant. This makes the securing of compliance with orders regarding water closets, wash rooms, rest rooms, etc., largely a matter of moral suasion. Although a large percentage of compliances is thus secured, we are unable to reach those conditions which most need to be remedied, as naturally, the landlord who permits unsanitary conditions to continue, can only be reached by force. When this division is empowered to enforce the provisions of the Labor Law and Industrial Code for sanitation, we shall be able to show better results.

I believe it would be of great benefit to employees and the general public if sanitary conditions in lunch rooms, restaurants, etc., were placed under the direct supervision of this division.

Repeated observation leads me to conclude that there is equal necessity for providing safeguards for elevators and hoistways in mercantile establishments as for those in factory buildings. I beg to recommend that this be done, and also that authority be given us to secure the proper guarding of machinery used in mercantile establishments, which at present is often a menace to the safety of employees.

At present our force is insufficient to fulfill properly the intentions of the Legislature as expressed in article 12 of the Labor Law, and the rules and regulations of the Industrial Code relating thereto, and I would recommend that this force be increased so that we may be able to carry out the full intent of the law.

The excellent showing made by this division during the past fiscal year is sufficient proof of the efficiency and faithfulness of our force, many of whom have given years of faithful service and effort to the work and merit an increase in salary, both as an acknowledgment of their service and to meet the demands of the increased cost of living.

During the past few years the weekly hours of labor of factory employees have been materially shortened, so that now from forty-eight to fifty-four hours per week is the rule. This is also true of many mercantile establishments, but there remain numbers of those and various other occupations whose employees work much longer hours; in some cases from twelve to fifteen hours per day. For the moral and physical welfare of all such employees and the general public good, I would suggest that the Legislature be requested to pass laws defining the hours of labor for males as has already been done for females.

Should you approve of the recommendations herein contained, I trust you will present them for favorable consideration by the Industrial Commission.

CHARLES B. ASH,
Chief Mercantile Inspector.

(4) REPORT OF DIVISION OF INDUSTRIAL HYGIENE

To the First Deputy Commissioner:

I beg to submit my report as chemical engineer, in charge of the Division of Industrial Hygiene for the year ending June 30, 1916.

Until July 1, 1916, the Division of Industrial Hygiene consisted of a director, in charge of the division; three medical inspectors, seven special investigators; one acting medical inspector, one chemical, one fire prevention and one mechanical engineer. Failure to provide funds for salaries in the budget for the director, mechanical and fire prevention engineers, and the seven special investigators, resulted in the services of those so affected being discontinued at the beginning of the fiscal year, July 1, 1916. This left the chemical engineer, two medical inspectors and two factory inspectors assigned to the division to continue the work.

The work of the division for the year consisted in the investigation of cases of industrial diseases, reported by physicians under section 65 of the Labor Law; making special investigations in factories to solve problems relating to ventilation and the removal of dust in certain processes, in which chemical tests of air in workrooms, in all cases, solved the problem whether it was necessary to provide ventilation systems; the investigation of several trades, the principal ones of which were the manufacture of mattresses, manufacture of barometers and thermometers, the effect of wood alcohol on workers engaged in varnishing beer vats; the starting of an intensive survey of the chemical industry which, on account of its large scope, was not finished during the year, but was finished under the direction of the chemical engineer after the end of the fiscal year.

Besides the above investigations, three of the special investigators were detailed to inspect scaffolds, ladders, hoists, stays, etc., used in connection with building construction. Following is a summary of orders issued as a result of these inspections:

ORDERS ISSUED ON NEW OR REMODELED BUILDINGS UNDER CONSTRUCTION BY THE DIVISION OF INDUSTRIAL HYGIENE IN THE FIRST INSPECTION DISTRICT AND REPORTED COMPLIANCES THEREWITH DURING THE NINE MONTHS ENDED JUNE 30, 1916.

Subject	Orders	Compliances
I **Administration:**		
2. **Keeping of records**	2	2
3. **Reporting to Department**	10	7
III Accident prevention:		
1. **Elevators and hoistways**	685	685
2. **Machinery**	2	1
3. **Switchboards**	2	2
4. **Stairs**	2	....
6. **Openings**	4	4
7. **Flooring**	257	257
8. **Scaffolding**	236	236
9. **Ladders**	29	29
10. **Hoisting lumber**	12	12
Total	1,241	*1,235

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* Includes all compliances reported up to close of tabulation on January 24, 1917.

One investigator was detailed the entire year to the enforcement of the sections of the Labor Law (sections 6, 7 and 8) relating to subway, elevated, steam surface and other railroads.

Two of the medical inspectors devoted considerable time to the investigation of conditions under which children between fourteen and sixteen years of age worked. A tabular summary of the results of this work is appended to this report.

FIRE PREVENTION ENGINEER

The work of the fire prevention engineer was devoted largely to field work, assisting in an advisory capacity and working in conjunction with the chemical engineer on the investigation of those trades where a thorough knowledge of fire risks and prevention was essential, and in the inspecting and testing of fire alarm signal systems in factories outside the city of New York.

MECHANICAL ENGINEER

The time of the mechanical engineer was largely spent in the approval of plans for exhaust systems for polishing, buffing and grinding wheels; the examination and approval of safety devices for elevators, which were both of a mechanical and electrical contact type, and also, in an advisory capacity, relating to the guarding of machinery. One special investigator was assigned to assist the mechanical engineer in investigating accidents on machines and elevators, also in making tests of exhaust systems.

CHEMICAL ENGINEER

The work of the chemical engineer was devoted principally to field work in the investigation of several dangerous trades with a view toward preparing pamphlets and leaflets, also to solving problems of ventilation in which chemical and physical tests were made of air in workrooms of factories and basements of mercantile establishments, whereby the amount of vitiation or pollution of air was readily determined. In this connection, physical examinations of workers, by the medical inspectors, were usually made to determine the effect of dust, fumes and gases on the employees.

In laboratory work, fifty-four chemical analyses were made of material, submitted by supervising inspectors and medical inspectors, which, when determined, assisted the medical inspectors in diagnosing cases of occupational diseases. Forty physical determinations, relating to fusible links, temperature, flash point of oils and explosive substances were made.

Various matters relating to section 89-a, which pertains to eating in workrooms, necessitated personal visits of the engineer to the places in question. During the year, 120 photographs, desired by supervisors and medical inspectors, were taken of machines, stairways, fire escapes and buildings, for the purpose of demonstrating good and bad conditions of devices, stairways and guards.

A number of explosions occurred, during the year, in factories in Niagara Falls, Buffalo, Split Rock and other places. In each case the cause was definitely determined. The explosions occurred in the chemical trades, all of which could have been prevented had rules or laws been in force relating to safety valves on the various tanks, and periodical inspections made of furnaces and tanks.

As the chemical trades are a great, growing industry, it is earnestly recommended that more attention be given to that branch of manufacture to prevent industrial poisoning and the injury peculiar to it. Section 65 of the Labor Law requires the reporting of eight occupational diseases. In addition to these, diseases which develop from poisoning by carbon monoxide, aniline, di-nitro benzol, di-chlor benzol, chlorine, methyl aniline, antimony, should be included in this section, on account of the number of cases of industrial poisoning found by the engineer in his work.

The investigation of the cleaning and dyeing industry resulted in great benefit to the industry, in that no explosions have occurred in this line of work since the investigation was undertaken. During the year several pieces of apparatus were added to our laboratory equipment for analytical field work, whereby a greater amount of work and speed in conducting certain analyses became possible.

MEDICAL INSPECTORS

The medical section was composed of four medical inspectors and one factory inspector acting as a medical inspector.

The work of this section covers a wide range. It is concerned with the prevention of occupational diseases, with the supervision of the well-being of factory workers in general, and with the proper scientific application of such laws and rules as cover these conditions. During the past year, there were a number of intensive investigations carried out by the medical section which have been of great interest. Among these investigations may be mentioned those of child labor in the industries, the cleaning and dyeing industry, the japanning trade, thermometer and scientific instrument industry, making of aniline dyes, anthrax, lead and wood alcohol poisoning in breweries. It may be said that the investigations conducted in the dyeing and cleaning industry and in the making of scientific instruments were the first to be undertaken in those fields.

Medical inspectors, besides their familiarity with the diseases which cause a disabling of the factory workers, must also have a knowledge of the proper remedying of conditions found in the field. Factory owners and employees of labor at large have come to look upon the medical inspectors as advisers, and many industrial problems have been solved by them. Laboratory equipment has been provided and the medical inspectors avail themselves of such laboratory facilities to facilitate their work; examinations of blood, urine and bacteriological specimens have been examined to confirm the findings made in the field.

In the child labor investigation, it was determined that carious teeth played a large part in the welfare of the child. When children with bad teeth are once permitted to work in industries, it is almost an impossibility to cause them to have the trouble taken care of later.

Hospitals and physicians have been lax in reporting cases of industrial disease, and it must be understood that for the proper control of these conditions, they must be investigated at once. The only method which we have of arriving at the source is through the certificate properly filled out and returned early in the illness of the patient. With the co-operation of all sources of information, industrial conditions producing occupational diseases would be much more easily controlled.

TOTAL WORK PERFORMED BY THE DIVISION OF INDUSTRIAL HYGIENE — OCTOBER 1, 1915, TO JUNE 30, 1916

Special inspections	1,217
Special investigations	1,709
Complaints	142
Research	2,149
Compliance visits, first	551
Compliance visits, subsequent	1,179
Building surveys	96
Railroad surveys	148
Tagging cases	14
Cases presented to counsel	9
Prosecutions begun	4
Medical inspections	4,425
Physical examinations	1,917

JOHN H. VOGT,

Chemical Engineer, in Charge of the Division.

PHYSICAL EXAMINATIONS OF CHILDREN BY MEDICAL INSPECTORS IN NINE MONTHS ENDED JUNE 30, 1916

INDUSTRY	NUMBER OF CHILDREN					
	EXAMINED			WHOSE PHYSICAL CONDITION WAS NORMAL		
	Male	Female	Total	Male	Female	Total
First Inspection District						
Artificial marble	1	......	1	1	......	1
Bags, cotton and burlap	2	......	2	1	......	1
Blue prints	1	......	1	1	......	1
Brushes	2	3	5	2	1	3
Buttons	2	24	26	1	14	15
Candy	......	4	4	......	1	1
Carriages (baby)	1	......	1	1	......	1
Chemicals	8	7	15	4	4	8
Clothing	20	144	164	18	76	94
Dyeing	1	2	3	1	2	3
Embroideries	1	19	20	1	8	9
Flags	......	1	1	......	......	......
Furniture	2	7	9	1	2	3
Furs	4	4	8	3	3	6
Glass (flint)	7	......	7	5	......	5
Gloves	......	44	44	......	24	24
Hand stamps	1	1	2	1	1	2
Hats (men's) and caps	3	1	4	2	1	3
Lace and netting	2	7	9	2	4	6
Laundry	4	......	4	2	......	2
Leather goods	13	9	22	12	5	17
Matches (safety)	1	1	2	......	......	......
Mattresses	1	2	3	1	......	1
Metals	44	30	74	16	9	25
Millinery	6	80	86	5	42	47
Mirrors and thermometers	42	10	52	19	4	23
Musical instruments	4	1	5	1	1	2
Paper goods	13	28	41	8	14	22
Pencils and pens	......	3	3	......	2	2
Printing and publishing	14	1	15	9	......	9
Rope and twine	......	2	2	......	1	1
Textiles	15	106	121	8	53	61
Tobacco	1	6	7	1	1	2
Toy novelties	......	1	1	......	......	......
Watch cases and jewelry	2	......	2	1	......	1
Mercantile establishment	1	......	1	......	......	......
Total	219	548	767	128	273	401
Second Inspection District						
Brushes	2	2	4	2	2	4
Chemicals	6	......	6	6	......	6
Clothing	1	10	11	1	9	10
Gloves	10	10	20	8	8	16
House trim	1	......	1	1	......	1
Metals	2	......	2	2	......	2
Paper	......	1	1	......	......	......
Piano actions	......	2	2	......	2	2
Printing	1	......	1	1	......	1
Textiles	2	......	2	1	......	1
Tobacco	7	36	43	7	20	27
Messenger service	14	......	14	14	......	14
Total	46	61	107	43	41	84
Grand total	265	609	874	171	314	485

Appendix

STATISTICAL TABLES

(Compiled by the Bureau of Statistics and Information)

Factory Inspection

Table

1. Work of factory inspectors.
2. Orders and compliances.
3. Prosecutions.
4. Violations of law referred to counsel without orders.
5. Cases referred to district attorneys for prosecution.
6. Children found illegally employed.
7. Children for whom proof of age was demanded.
8. Children found employed.

Homework Inspection

9. Work of homework inspectors.
10. Licensing tenements.
11. Registers of outside workers.
12. Permits to factories for home work.
13. Children found illegally employed (table in four divisions, a to d).

Mercantile Inspection

14. Work of mercantile inspectors by kinds of work.
15. Work of mercantile inspectors by localities.
16. Orders and compliances.
17. Prosecutions.
18. Violations of law referred to counsel without orders.
19. Cases referred to district attorneys for prosecution.
20. Children found illegally employed.
21. Children found employed.
22. Illegal hours or prohibited employment of women and minors, and violations of day-of-rest law.
23. Complaints.

Medical Inspection

24. Diseases found in children examined by medical inspectors.

Industrial Diseases

25. Industrial diseases reported.

Employment Certificates

26. Certificates issued by boards of health.

Table 1 — WORK OF FACTORY INSPECTORS

	NINE MONTHS ENDED JUNE 30, 1916			Twelve months ended September 30, 1915
	First Inspection District	Second Inspection District	Total State	
Number of regular inspections of:				
Factories occupying whole buildings	3,921	9,794	13,715	13,723
Tenant factories	15,982	4,841	20,823	25,348
Bakeries	47	1,393	1,440	1,925
Total	19,950	16,028	35,978	40,996
Number of special inspections (with or without orders)	2,866	885	3,751	6,869
Number of complaints investigated	3,347	236	3,583	2,296
Number of building surveys	10,791	12,154	22,945	†
Number of special investigations	6,309	1,263	7,572	*
Number of compliance visits:				
First visits	18,978	7,850	26,828	31,375
Subsequent visits	25,298	10,191	35,489	30,924
Total	44,276	18,041	62,317	62,299
Number of tagging cases (exclusive of "assisting"):				
Section 95 (unclean factories)	350	7	357	240
Section 114 (unclean bakeries)	....	3	3	37
Section 81 (dangerous machinery)	42	33	75	19
Section 19 (scaffolds)	15	....	15	....
Total	407	43	450	296
Number of miscellaneous matters	21,766	3,627	25,393	51,920

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* Comparative figures not available.

† Surveys of factory buildings were begun on October 1, 1915.

Table 2 — ORDERS ISSUED BY THE DIVISION OF FACTORY INSPECTION AND REPORTED COMPLIANCES THEREWITH FROM OCTOBER 1, 1915, TO JUNE 30, 1916

SUBJECT OF ORDERS	NUMBER OF ORDERS ISSUED IN —			NUMBER OF COMPLIANCES REPORTED IN —		
	First Inspection District	Second Inspection District	Total State	First Inspection District	Second Inspection District	Total State
I. ADMINISTRATION	*21,497*	*4,896*	*26,393*	*21,598*	*4,814*	*26,412*
1. Posting of laws, permits, notices, etc	21,385	4,872	26,257	21,428	4,646	26,074
2. Keeping of records, registers, etc	111	23	134	125	101	226
3. Reporting to Department	1	1	2	45	67	112
4. Interfering with inspector	......	......	......	......	......	....

TABLE 2 — ORDERS ISSUED BY THE DIVISION OF FACTORY INSPECTION AND REPORTED COMPLIANCES THEREWITH FROM OCTOBER 1, 1915, TO JUNE 30, 1916 — (*Concluded*)

SUBJECT OF ORDERS	NUMBER OF ORDERS ISSUED IN —			NUMBER OF COMPLIANCES REPORTED IN —		
	First Inspection District	Second Inspection District	Total State	First Inspection District	Second Inspection District	Total State
II. SANITATION	*19,112*	*12,926*	*32,038*	*20,979*	*10,965*	*31,944*
1. Toilet facilities:						
a. Water closets	8,960	6,558	15,518	11,015	6,032	17,047
b. Wash rooms	1,850	1,408	3,258	1,551	1,150	2,701
c. Dressing rooms	3,380	738	4,118	3,084	653	3,737
2. Cleanliness or repair of workrooms, halls, etc	4,291	2,274	6,565	4,791	1,778	6,569
3. Ventilation, heat and humidity:						
a. General	40	79	119	30	59	89
b. Removal of dust, fumes, etc	354	703	1,057	289	626	915
4. Lighting	44	18	62	31	18	49
5. Meals	26	237	263	21	309	330
6. Drinking water and drinking cups	167	911	1,078	167	340	507
7. Sanitation of living quarters.	......	......	......	......	......	....
III. ACCIDENT PREVENTION	*13,988*	*22,495*	*36,483*	*15,743*	*25,891*	*41,634*
1. Elevators and hoistways	5,305	7,936	13,241	5,700	8,982	14,682
2. Machinery (including vats, pans, etc.)	7,303	12,169	19,472	8,217	14,656	22,873
3. Switchboards	298	426	724	305	388	693
4. Stairs, platforms, pits, floors, etc. (incl. repairs)	616	1,803	2,419	711	1,555	2,266
5. Lighting to prevent accidents	466	161	627	810	310	1,120
IV. FIRE PROTECTION	*11,901*	*6,532*	*18,433*	*16,374*	*6,325*	*22,699*
1. Structural conditions:						
a. Number of exits	1,471	761	2,232	2,051	886	2,937
b. Doors, doorways and windows	1,867	748	2,615	2,961	1,347	4,308
c. Stairways	1,071	135	1,206	2,362	164	2,526
d. Fire escapes	67	98	165	215	207	422
e. Partitions	307	33	340	442	10	452
f. Openings	75	16	91	82	41	123
g. Other or general	......	12	12	......	18	18
2. Clear means of egress	5,796	1,160	6,956	6,394	1,960	8,354
3-a. Fire alarms	......	678	678	4	94	98
3-b. Fire drills and records	......	1,142	1,142	......	256	256
4. Waste and other inflammable materials	184	801	985	589	719	1,308
5. Gas jets	281	25	306	604	48	652
6. Smoking	8	656	664	6	295	301
7. Sprinklers	......	......	......	......	......	....
8. Number of occupants	594	60	654	371	48	419
9. Fire escapes other than structural conditions	179	168	347	293	218	511
10. Fire extinguishers	1	39	40	......	14	14
V. CHILDREN†	*3*	*2*	*5*	*1*	*3*	*4*
2. From 14 to 16 years:						
c. Prohibited occupations.	3	2	5	1	3	4
VI. WOMEN AND MALE MINORS	*44*	*117*	*161*	*58*	*135*	*193*
1. Hours	24	102	126	27	118	145
2. Prohibited occupations	......	3	3	1	4	5
3. Employment after childbirth	......	......	......	......	......	....
4. Seats for women	20	12	32	30	13	43
VII. DAY OF REST	*730*	*301*	*1,031*	*1,497*	*344*	*1,841*
VIII. MISCELLANEOUS	*1,089*	*766*	*1,855*	*903*	*259*	*1,162*
1. Payment of wages	21	33	54	19	24	43
3. First aid appliances	1,060	731	1,791	875	232	1,107
4. Screens for stairs	8	2	10	9	3	12
TOTAL	68,364	48,035	116,399	*77,153	*48,736	*125,889

* Includes 1,603 cases in the First Inspection District, 1,032 cases in the Second Inspection District, and 2,635 cases in the State in which the illegal conditions ceased by reason of modifications in the law, Industrial Code, or accompanying circumstances such as to make the original orders no longer necessary.

† See separate tabulation for number of children found illegally employed (except " prohibited occupations ").

Table 3 — PROSECUTIONS FOR VIOLATIONS

FIRST INSPECTION DISTRICT

A. Proceedings Instituted

SUBJECT OF LAW INVOLVED	Number of cases	RESULTS TO JUNE 30, 1916				
		Pending	Dismissed, acquitted or withdrawn	Convicted		
				Sentence suspended	Fined	Fine
II. SANITATION						
3. Ventilation, heat and humidity:						
b. Removal of dust, fumes, etc	1	....	1	......	....	......
7. Sanitation of living quarters	....	....	......	......	....	......
III. ACCIDENT PREVENTION						
1. Elevators and hoistways	12	....	12	......	....	......
2. Machinery (including vats, pans, etc.)	4	....	4	......	....	......
IV. FIRE PROTECTION						
1. Structural conditions:						
a. Number of exits	53	2	29	12	10	$360 00
b. Doors, doorways and windows	6	1	4	......	1	20 00
c. Stairways	1	....	......	1	....	....
g. Other or general	42	....	29	2	11	400 00
2. Clear means of egress:						
a. Locked doors	5	....	......	2	3	125 00
b. Other	1	....	......	1	....	....
3. Number of occupants	3	....	......	......	3	90 00
V. CHILDREN						
1. Under 14 years	1	....	......	......	1	20 00
2. From 14 to 16 years:						
a. Certificates	4	....	1	2	1	20 00
b. Hours	3	....	......	1	2	40 00
VI. WOMEN AND MALE MINORS						
1. Hours	5	2	......	1	2	40 00
VII. DAY OF REST						
Day of rest	3	....	1	......	2	40 00
VIII. MISCELLANEOUS						
1. Payment of wages	....	....	......	......	....	....
Total	144	5	81	22	36	$1,155 00

OF THE LABOR LAW IN FACTORIES

SECOND INSPECTION DISTRICT						TOTAL STATE						Subject number
Number of cases	RESULTS TO JUNE 30, 1916					Number of cases	RESULTS TO JUNE 30, 1916					
	Pending	Dismissed, acquitted or withdrawn	Convicted		Fines		Pending	Dismissed, acquitted or withdrawn	Convicted		Fines	
			Sentence suspended	Fined					Sentence suspended	Fined		
Prior to October 1, 1915												
												II
....	....	......				1	....	1	......	....		3-b
4	....	4				4	....	4	......			7
												III
....	....	......				12	....	12	......			1
....	....	......				4	....	4	......	....	....	2
												IV
2	....	2				55	2	31	12	10	$360 00	1-a
2	1	1				8	2	5	......	1	20 00	1-b
....	....	......				1	....	......	1	....	....	1-c
1	1	......			.....	43	1	29	2	11	400 00	1-g
....	....	......				5	....	......	2	3	125 00	2-a
....	....	......				1	....	......	1	....	....	2-b
....	....	......			.....	3	....	......	......	3	90 00	8
												V
4	....	1	2	1	$20 00	5	....	1	2	2	40 00	1
2	....	1	1	....	......	6	....	2	3	1	20 00	2-a
1	....	......	1	....	......	4	....	......	2	2	40 00	2-b
												VI
10	2	8	......	....	......	15	4	8	1	2	40 00	1
												VII
4	3	1	......	....	......	7	3	2	......	2	40 00	
												VIII
2	1	......	......	1	100 00	2	1	......	......	1	100 00	1
32	8	18	4	2	$120 00	176	13	99	26	38	$1,275 00	

Table 3—PROSECUTIONS FOR VIOLATIONS OF

SUBJECT OF LAW INVOLVED	FIRST INSPECTION DISTRICT					
	Number of cases	RESULTS TO JUNE 30, 1916				
		Pending	Dismissed, acquitted or withdrawn	Convicted		Fines
				Sentence suspended	Fined	
			B. Proceedings Instituted in Current			
I. ADMINISTRATION						
4. Interfering with inspector	3	....	1	.....	2	$40 00
II. SANITATION						
1. Toilet facilities:						
a. Water closets	26	7	14	4	1	20 00
b. Wash rooms	6	2	3	1	....	......
c. Dressing rooms	16	2	10	2	2	40 00
2. Cleanliness or repair of workrooms, halls, etc	1	....	1	.....	....	....
3. Ventilation, heat and humidity:						
a. General	....	....	......	.....	....	....
b. Removal of dust, fumes, etc	12	1	6	4	1	50 00
III. ACCIDENT PREVENTION						
1. Elevators and hoistways	132	27	51	48	6	215 00
2. Machinery (including vats, pans, etc.)	11	3	5	2	1	20 00
4. Stairs, platforms, pits, floors, etc. (including repairs)	1	1	......	.....	....	.....
5. Lighting to prevent accidents	6	2	2	2	....	....
IV. FIRE PROTECTION						
1. Structural conditions:						
a. Number of exits	739	252	164	240	83	2,825 00
b. Doors, doorways and windows	41	12	21	7	1	25 00
c. Stairways	97	21	24	36	16	610 00
d Fire escapes	1	....	1	.....	....	......
2. Clear means of egress	91	3	12	16	60	1,245 00
4. Waste and inflammable material	....	....	......	.....	....	......
6. Smoking	1	....	......	1	....	....
8. Number of occupants	19	2	3	8	6	165 00
V. CHILDREN						
1 Under 14 years	14	2	1	7	4	110 00
2. From 14 to 16 years:						
a. Certificates	34	2	4	17	11	250 00
b. Hours	54	3	2	21	28	560 00
c. Prohibited occupations	2	....	......	1	1	20 00
VI. WOMEN AND MALE MINORS						
1. Hours	145	2	3	58	82	1,815 00
2. Prohibited occupations	....	....	......	.....	....	....
VII. DAY OF REST						
Day of rest	2	....	1	.....	1	20 00
VIII. MISCELLANEOUS						
3. Firts aid appliances	3	....	3	.....	....	......
5. Tenement houses	27	....	1	19	7	140 00
6. Construction of buildings in cities	3	....	1	1	1	20 00
Total	1,487	344	334	493	314	$8,190 00
Grand total	1,631	349	415	517	350	$9,345 00

THE LABOR LAW IN FACTORIES — (*Concluded*)

Second Inspection District						Total State						Subject number
	Results to June 30, 1916						Results to June 30, 1916					
			Convicted						Convicted			
Number of cases	Pending	Dismissed, acquitted or withdrawn	Sentence suspended	Fined	Fines	Number of cases	Pending	Dismissed, acquitted or withdrawn	Sentence suspended	Fined	Fines	
Year (Oct. 1, 1915–June 30, 1916)												
												I
1	....	......	......	1	$35 00	4	....	1	.....	3	$75 00	4
												II
12	3	6	2	1	20 00	38	10	20	6	2	40 00	1a
2	....	......	2	....	......	8	2	3	3	....	....	1b
1	....	......	1	....	......	17	2	10	3	2	40 00	1c
11	2	4	4	1	20 00	12	2	5	4	1	20 00	2
1	....	1	......	....	......	1	....	1	.....	....	....	3a
1	....	1	......	....	......	13	1	7	4	1	50 00	3b
												III
25	5	9	9	2	40 00	157	32	60	57	8	255 00	1
20	1	8	11	....	......	31	4	13	13	1	20 00	2
2	1	......	1	....	......	3	2	......	1	....	....	4
3	1	1	1	....	......	9	3	3	3	....	....	5
												IV
83	31	28	23	1	25 00	822	283	192	263	84	2,850 00	1a
14	4	5	4	1	20 00	55	16	26	11	2	45 00	1b
5	3	......	1	1	20 00	102	24	24	37	17	630 00	1c
2	....	1	1	....	......	3	....	2	1	....	....	1d
12	2	5	4	1	20 00	103	5	17	20	61	1,265 00	2
2	....	1	1	....	......	2	....	1	1	....	....	4
5	....	1	3	1	20 00	6	....	1	4	1	20 00	6
.....	....	......	......	....	......	19	2	3	8	6	165 00	8
												V
2	....	2	......	....	......	16	2	3	7	4	110 00	1
12	....	1	10	1	20 00	46	2	5	27	12	270 00	2a
5	....	1	4	....	......	59	3	3	25	28	560 00	2b
8	2	1	5	....	......	10	2	1	6	1	20 00	2c
												VI
25	....	7	11	7	130 00	170	2	10	69	89	1,945 00	1
1	....	......	1	....	......	1	....	......	1	....	....	2
												VII
.....	....	......	......	....	......	2	....	1	.....	1	20 00	
												VIII
.....	....	......	......	....	......	3	....	3	.....	....	....	3
.....	....	......	......	....	......	27	....	1	19	7	140 00	5
.....	....	......	......	....	......	3	....	1	1	1	20 00	6
255	55	83	99	18	$370 00	1,742	399	417	594	332	$8,560 00	
287	63	101	103	20	$490 00	1,918	412	516	620	370	$9,835 00	

Table 4 — VIOLATIONS OF THE LABOR LAW IN FACTORIES REFERRED TO COUNSEL WITHOUT ISSUANCE OF ORDERS IN THE NINE MONTHS ENDED JUNE 30, 1916

SUBJECT OF VIOLATION	Referred	Prosecuted	Not prosecuted by order of Commission
(a) *First District*			
IV. FIRE PROTECTION:			
2. Clear means of egress:			
a — Locked doors	95	71	24
V. CHILDREN:			
1. Employment of, under 14 years of age	14	14	....
2. From 14 to 16 years:			
a — Employment of, without certificates	79	34	45
b — Employment of, illegal hours	88	54	34
c — Employment of, in prohibited occupations —			
Operating circular saw	1	1	....
Operating drill press	1	1	....
Operating printing press	1	....	1
VI. WOMEN AND MINORS:			
1. Illegal hours:			
Employing female minors	82	81	1
Employing male minors	4	4	....
Employing women	80	60	20
VII. FAILURE TO COMPLY WITH DAY OF REST LAW	11	2	9
Total	456	322	134
(b) *Second District*			
IV. FIRE PROTECTION:			
2. Clear means of egress:			
a — Locked doors	14	10	4
V. CHILDREN:			
1. Employment of, under 14 years of age	2	2	....
2. From 14 to 16 years:			
a — Employment of, without certificates	44	12	32
b — Employment of, illegal hours	34	5	29
c — Employment of, in prohibited occupations —			
Operating circular saw	4	2	2
Operating drill press	1	1	....
Operating elevators	3	3	....
Operating grinding wheels	1	1	....
Operating printing presses	2	1	1
VI. WOMEN AND MINORS:			
1. Illegal hours:			
Employing female minors	19	18	1
Employing male minors	3	....	3
Employing women	8	7	1
VII. FAILURE TO COMPLY WITH DAY OF REST LAW	1	....	1
Total	136	62	74

Table 4 — VIOLATIONS OF THE LABOR LAW IN FACTORIES REFERRED TO COUNSEL WITHOUT ISSUANCE OF ORDERS IN THE NINE MONTHS ENDED JUNE 30, 1916 — (*Concluded*)

SUBJECT OF VIOLATION	Referred	Prosecuted	Not prosecuted by order of Commission
(c) *Total State*			
IV. FIRE PROTECTION:			
2. Clear means of egress:			
a — Locked doors	109	81	28
V. CHILDREN:			
1. Employment of, under 14 years of age	16	16	....
2. From 14 to 16 years:			
a — Employment of, without certificates	123	46	77
b — Employment of, illegal hours	122	59	63
c — Employment of, in prohibited occupations —			
Operating circular saw	5	3	2
Operating drill press	2	2	....
Operating elevators	3	3	....
Operating grinding wheels	1	1	....
Operating printing presses	3	1	2
VI. WOMEN AND MINORS:			
1. Illegal hours:			
Employing female minors	101	99	2
Employing male minors	7	4	2
Employing women	88	67	31
VII. FAILURE TO COMPLY WITH DAY OF REST LAW	12	2	10
Total	592	384	208

Table 5 — CASES FOR PROSECUTION REFERRED BY THE DIVISION OF FACTORY INSPECTION TO DISTRICT ATTORNEYS, AND DISPOSITION THEREOF, IN NINE MONTHS ENDED JUNE 30, 1916

			Cases Closed				
					Disposition of convicted cases		
						Fined	
Subject of Law Violated	County in which violation occurred	Number of cases referred	Dismissed or acquitted	Convicted	Suspended sentence	Number	Amount
Failure to pay wages in cash	Chemung	1					
Failure to pay wages in cash	Ulster	1					
Failure to pay wages weekly	Herkimer	1					
Failure to pay wages weekly	Monroe	1					
Failure to pay wages weekly	St. Lawrence	1					
Failure to pay wages weekly and in cash	Yates	1					
Failure to observe day of rest law	Kings	1					
Failure to observe day of rest law	New York	4	1	2	1	1	$20
Failure to observe day of rest law	Richmond	1		1		1	1
Failure to observe day of rest law	Dutchess	1	*1				
Failure to observe day of rest law	Erie	1					
Failure to observe day of rest law	Orange	2					
Total		16	*2	3	1	2	$21

* Includes 1 case in which the Grand Jury refused to indict.

Table 6 — CHILDREN FOUND ILLEGALLY EMPLOYED IN FACTORIES IN NINE MONTHS ENDED JUNE 30, 1916

LOCALITY	Number of establishments	NUMBER OF CHILDREN — Under 14 years of age: Boys	Under 14 years of age: Girls	14-16, working without certificates: Boys	14-16, working without certificates: Girls	Working illegal hours	Total children
New York City:							
Bronx	8	2	......	1	2	3	8
Manhattan	218	12	1	34	58	180	285
Brooklyn	80	4	......	17	26	47	94
Queens	20	1	......	4	13	8	26
Richmond	3	......	1	......	......	2	3
Total — New York City	329	19	2	*56	*99	240	416
Long Island outside of New York City	3	......	......	......	2	1	3
Total — First District	332	19	2	56	101	241	419
Albany	4	......	......	4	1	......	5
Binghamton	1	......	......	2	......	......	2
Buffalo	32	1	......	16	4	14	35
Rochester	6	......	......	3	2	2	7
Syracuse	5	......	......	......	1	5	6
Troy	1	......	......	1	......	......	1
Utica	5	......	......	2	......	3	5
Yonkers	3	......	......	......	2	1	3
Remainder of State	80	10	2	52	26	25	115
Total — Second District	137	11	2	†80	†36	50	179
Total — State	469	30	4	‡136	‡137	291	598

* Included in this total are 6 boys and 22 girls who were also found to be working illegal hours.
† Included in this total are 40 boys and 17 girls who were also found to be working illegal hours.
‡ Included in this total are 46 boys and 39 girls who were also found to be working illegal hours.

Table 7—CHILDREN FOR WHOM PROOF OF AGE WAS DEMANDED IN FACTORIES IN NINE MONTHS ENDED JUNE 30, 1916

	Age proven 16	Age proven 14-16, (certificate secured)	Age proven less than 14, (discharged)	Discharged without proof of age
First Inspection District:				
Males	1	....	....	....
Females	3	....	....	1
Total	4	....	....	1
Second Inspection District:				
Males	8	2	....	9
Females	3	....	....	5
Total	11	2	....	14
Total State:				
Males	9	2	....	9
Females	6	....	....	6
Total	15	2	....	15

Table 8 — CHILDREN 14 TO 16 YEARS OF AGE FOUND EMPLOYED IN FACTORIES IN NEW YORK STATE IN THE NINE MONTHS ENDED JUNE 30, 1916

City	Number of establishments	Number of Children		
		Boys	Girls	Total
Albany	28	35	38	73
Amsterdam	16	55	66	121
Auburn	10	21	25	46
Batavia	3	2	1	3
Beacon	9	13	22	35
Binghamton	11	12	35	47
Buffalo	261	442	374	816
Canandaigua	1	3	....	3
Cohoes	17	14	15	29
Corning	1	1	....	1
Cortland	5	6	5	11
Dunkirk	7	3	17	20
Elmira	2	1	1	2
Fulton	2	19	15	34
Geneva	1	....	2	2
Glens Falls	6	3	3	6
Gloversville	12	19	17	36
Hornell	3	3	2	5
Hudson	4	3	5	8
Ithaca	1	....	1	1
Jamestown	22	49	23	72
Johnstown	5	6	7	13
Kingston	10	43	98	141
Lackawanna	....	....	....	....
Little Falls	2	2	2	4
Lockport	4	2	9	11
Mechanicville	3	1	2	3
Middletown	3	1	5	6
Mount Vernon	8	1	20	21
Newburgh	5	4	3	7
New Rochelle	2	....	10	10
New York	1,655	1,219	3,104	4,323
Manhattan	*1,084*	*697*	*1,882*	*2,579*
Brooklyn	*392*	*290*	*779*	*1,069*
Bronx	*52*	*76*	*139*	*215*
Queens	*114*	*141*	*277*	*418*
Richmond	*13*	*15*	*27*	*42*
Niagara Falls	7	12	9	21
North Tonawanda	12	28	21	49
Norwich	3	1	10	11
Ogdensburg	3	2	1	3
Olean	4	1	4	5
Oneida	5	1	9	10
Oneonta	....	....	....	....
Oswego	10	17	42	59
Plattsburg	1	1	....	1
Port Jervis	3	2	6	8
Poughkeepsie	11	24	37	61
Rensselaer	....	....	....	....
Rochester	165	334	362	696
Rome	4	4	9	13
Salamanca	....	....	....	....
Saratoga Springs	1	4	2	6
Schenectady	4	134	1	135
Syracuse	49	103	123	226
Tonawanda	6	11	1	12

Table 8 — CHILDREN 14 TO 16 YEARS OF AGE FOUND EMPLOYED IN FACTORIES IN NEW YORK STATE IN THE NINE MONTHS ENDED JUNE 30, 1916 — (*Concluded*)

CITY	Number of establishments	NUMBER OF CHILDREN		
		Boys	Girls	Total
Troy	15	15	13	28
Utica	45	76	179	255
Watertown	3	1	6	7
Watervliet	3	8	....	8
White Plains	....	....	....	....
Yonkers	7	4	8	12
Remainder of State	181	283	278	561
Total	2,661	3,049	5,048	8,097

Table 9 — SUMMARY OF WORK OF HOME WORK INSPECTORS

	1916†	1915	1914	1913	1912
Investigations (including re-investigations) of applications for license	2,167	2,789	3,823	2,322	2,072
Inspections of licensed buildings	14,707	14,512	12,199	11,238	12,755
Observations	1,901	2,250	2,295	3,141	2,305
Inspections of tenement factories	378	310	484	......	......
Tagging cases (exclusive of " assisting ") under section 102	275	122	284	239	102
Complaints investigated	371	206	275	*.....	*.....
Compliance visits	3,834	2,836	8,917	*.....	*.....
Miscellaneous matters	4,343	9,508	12,553	*.....	*.....

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* Comparative figures not available.

† Nine months.

Table 10 — LICENSING OF TENEMENTS FOR NINE MONTHS ENDED JUNE 30, 1916

	New York City	Remainder of State	Total
Licenses outstanding October 1, 1915	13,847	525	14,372
Applications pending October 1, 1915	24	....	24
Applications received	2,018	105	2,123
Total	2,042	105	2,147
Applications cancelled	73	14	87
Applications pending June 30, 1916	42	....	42
Licenses granted:			
On first investigation	1,860	104	1,964
On re-investigation	59	....	59
Total	1,919	104	2,023
Licenses cancelled	1,358	182	1,540
Licenses revoked	9	....	9
Total	1,367	182	1,549
Licenses outstanding June 30, 1916	14,399	447	14,846

Table 11 — REGISTERS OF OUTSIDE WORKERS

YEAR ENDED SEPTEMBER 30	Notifications issued	Registers filed	Not found or out of business	Reported no outside hands
1916 (nine months†)	2,336	1,459	232	161
1915	1,852	1,847	313	345
1914	3,407	1,886	154	167
1913	1,318	636	47	118
1912	4,164	1,976	253	212
1911	1,658	718	74	93
1910	2,924	1,999	463	262
1909	2,947	2,292	258	342
1908	2,743	2,101	330	432
1907	5,740	1,832	327	576

Table 12 — PERMITS TO FACTORY OWNERS TO SEND WORK TO TENEMENTS

Permits outstanding October 1, 1915		*2,158
Issued during year	443	
Cancelled during year	272	
Outstanding June 30, 1916		2,329

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* Corrected figure.

† Ended June 30th.

Table 13 — CHILDREN UNDER 16 YEARS OF AGE FOUND ILLEGALLY EMPLOYED IN TENEMENT LIVING ROOMS IN NEW YORK CITY: (a) BY SEX AND ARTICLES ON WHICH WORK WAS BEING DONE

ARTICLES ON WHICH WORK WAS BEING DONE	NUMBER* FOUND IN —					
	YEAR ENDED SEPT. 30, 1915			NINE MONTHS ENDED JUNE 30, 1916		
	Boys	Girls	Total	Boys	Girls	Total
Aprons	......	......	......	1	1	2
Artificial flowers	50	108	158	54	112	166
Beads	1	2	3	......	1	1
Belts	......	1	1	......	1	1
Blouses	......	1	1	......	3	3
Booties (infants')	......	1	1	......	......	......
Braid loops	......	......	......	......	3	3
Brushes	......	......	......	......	1	1
Buttons	......	2	2	......	......	......
Caps (boudoir)	......	......	......	......	1	1
Chair caning	......	......	......	......	2	2
Cigars and cigarettes	1	......	1	1	1	2
Coats	9	36	45	16	63	79
Corset covers	......	1	1	......	2	2
Crochet rings	1	8	9	......	......	......
Dolls' legs	......	......	......	2	3	5
Dresses	......	1	1	......	1	1
Embroidery	7	61	68	5	45	50
Feathers	7	7	14	......	2	2
Folding circulars	2	......	2	......	......	......
Folding handkerchiefs	......	1	1	......	......	......
Garters	1	......	1	4	1	5
Gloves	......	2	2	......	......	......
Hair weaving	......	1	1	......	......	......
Hat novelties	2	1	3	......	1	1
Hats	......	......	......	......	2	2
Kid curlers	......	2	2	......	......	......
Lace	1	1	2	......	......	......
Neckwear	......	1	1	......	3	3
Night gowns (children's)	......	1	1	......	......	......
Pants	17	92	109	20	100	120
Paper bags	......	1	1	1	......	1
Petticoats (infants')	......	......	......	......	1	1
Piano felt pads	......	......	......	......	2	2
Post cards	......	......	......	1	......	1
Powder puffs	......	......	......	......	1	1
Ribbon bows	......	......	......	......	1	1
Sashes (children's cloak)	......	1	1	......	......	......
Shell cameo stones	2	......	2	......	......	......
Shirt waists	......	......	......	......	1	1
Skirts	......	......	......	......	4	4
Sweaters	1	......	1	......	1	1
Tags	1	1	2	......	......	......
Umbrella straps	......	1	1	......	......	......
Underwear	1	3	4	2	1	3
Veiling	......	1	1	......	......	......
Vests	......	1	1	3	......	3
Total	104	340	444	110	361	471

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* These children in 1915 were found in 312 apartments connected with 258 tenement houses, and in 1916 were found in 340 apartments connected with 272 tenement houses in New York City.

Table 13 — CHILDREN UNDER 16 YEARS OF AGE FOUND ILLEGALLY EMPLOYED IN TENEMENT LIVING ROOMS IN NEW YORK CITY: (b) BY AGES AND ARTICLES ON WHICH WORK WAS BEING DONE.

Articles on Which Work Was Being Done	Period*	Number Found Whose Ages Were —				
		2 to 5 years	6 to 10 years	11 to 13 years	14 to 15 years	Total
Aprons	1915	......	......	......	......	......
	1916	......	......	1	1	2
Artificial flowers	1915	11	73	45	29	158
	1916	12	71	60	23	166
Beads	1915	......	......	1	2	3
	1916	......	1	......	......	1
Belts	1915	......	......	1	......	1
	1916	......	......	1	......	1
Blouses	1915	......	......	1	......	1
	1916	......	1	1	1	3
Booties (infants')	1915	......	......	1	......	1
	1916	......	......	......	......	......
Braid loops	1915	......	......	......	......	......
	1916	......	......	3	......	3
Brushes	1915	......	......	......	......	......
	1916	......	......	1	......	1
Buttons	1915	......	......	1	1	2
	1916	......	......	......	......	......
Caps (boudoir)	1915	......	......	......	......	......
	1916	......	1	......	......	1
Chair caning	1915	......	......	......	......	......
	1916	......	......	1	1	2
Cigars and cigarettes	1915	......	1	......	......	1
	1916	......	......	1	1	2
Coats	1915	3	9	21	12	45
	1916	3	36	28	12	79
Corset covers	1915	......	......	......	1	1
	1916	......	1	1	......	2
Crochet rings	1915	......	3	4	2	9
	1916	......	......	......	......	......
Dolls' legs	1915	......	......	......	......	......
	1916	......	3	1	1	5
Dresses	1915	......	......	......	1	1
	1916	......	......	......	1	1
Embroidery	1915	2	20	29	17	68
	1916	......	15	21	14	50
Feathers	1915	3	4	3	4	14
	1916	......	1	1	......	2
Folding circulars	1915	......	2	......	......	2
	1916	......	......	......	......	......
Folding handkerchiefs	1915	......	......	......	1	1
	1916	......	......	......	......	......
Garters	1915	......	......	1	......	1
	1916	......	1	2	2	5
Gloves	1915	......	......	2	......	2
	1916	......	......	......	......	......
Hair weaving	1915	......	......	......	1	1
	1916	......	......	......	......	......
Hat novelties	1915	......	1	2	......	3
	1916	......	......	1	......	1
Hats	1915	......	......	......	......	......
	1916	......	1	1	......	2

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* 1915=year ended September 30, 1915; 1916=nine months ended June 30, 1916.

Table 13 — CHILDREN UNDER 16 YEARS OF AGE FOUND ILLEGALLY EMPLOYED IN TENEMENT LIVING ROOMS IN NEW YORK CITY: (b) BY AGES AND ARTICLES ON WHICH WORK WAS BEING DONE — (*Concluded*)

		NUMBER FOUND WHOSE AGES WERE —				
ARTICLES ON WHICH WORK WAS BEING DONE	Period*	2 to 5 years	6 to 10 years	11 to 13 years	14 to 15 years	Total
Kid curlers	1915	......	......	1	1	2
	1916	......	......	......	......	......
Lace	1915	......	......	1	1	2
	1916	......	......	......	......	......
Neckwear	1915	......	......	......	1	1
	1916	......	1	......	2	3
Night gowns (children's)	1915	......	......	......	1	1
	1916	......	......	......	......	......
Pants	1915	4	23	58	24	109
	1916	1	34	54	31	120
Paper bags	1915	......	......	......	1	1
	1916	......	......	......	1	1
Petticoats (infants')	1915	......	......	......	......	......
	1916	......	......	......	1	1
Piano felt pads	1915	......	......	......	......	......
	1916	......	......	1	1	2
Post cards	1915	......	......	......	......	......
	1916	......	1	......	......	1
Powder puffs	1915	......	......	......	......	......
	1916	......	......	1	......	1
Ribbon bows	1915	......	......	......	......	......
	1916	......	......	......	1	1
Sashes (children's cloak)	1915	......	......	1	......	1
	1916	......	......	......	......	......
Shell cameo stones	1915	......	......	......	2	2
	1916	......	......	......	......	......
Shirt waists	1915	......	......	......	......	......
	1916	......	......	......	1	1
Skirts	1915	......	......	......	......	......
	1916	......	1	1	2	4
Sweaters	1915	......	......	1	......	1
	1916	......	......	......	1	1
Tags	1915	......	1	1	......	2
	1916	......	......	......	......	......
Umbrella straps	1915	......	......	1	......	1
	1916	......	......	......	......	......
Underwear	1915	......	1	2	1	4
	1916	......	1	1	1	3
Veiling	1915	......	......	......	1	1
	1916	......	......	......	......	......
Vests	1915	......	......	1	......	1
	1916	......	1	1	1	3
Total	1915	23	138	179	104	444
	1916	16	171	184	100	471

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* 1915=year ended September 30, 1915; 1916=nine months ended June 30, 1916.

Table 13 — CHILDREN UNDER 16 YEARS OF AGE FOUND ILLEGALLY EMPLOYED IN TENEMENT LIVING ROOMS IN NEW YORK CITY: (c) BY HOURS WHEN FOUND AND ARTICLES ON WHICH WORK WAS BEING DONE

ARTICLES ON WHICH WORK WAS BEING DONE	Period*	NUMBER WHO WERE FOUND — In the fore-noon	From noon to 3 p. m.	From 3 to 6 p. m.	From 6 to 8 p. m.	After 8 p. m.	Total
Aprons	1915	......	......	......	......	......	......
	1916	1	......	1	......	......	2
Artificial flowers	1915	21	23	60	47	7	158
	1916	2	33	97	34	......	166
Beads	1915	2	......	......	1	......	3
	1916	1	......	......	......	......	1
Belts	1915	......	......	1	......	......	1
	1916	......	......	1	......	......	1
Blouses	1915	......	......	1	......	......	1
	1916	......	......	3	......	......	3
Booties (infants')	1915	1	......	......	......	......	1
	1916	......	......	......	......	......	......
Braid loops	1915	......	......	......	......	......	......
	1916	2	1	......	......	......	3
Brushes	1915	......	......	......	......	......	......
	1916	......	1	......	......	......	1
Buttons	1915	......	1	1	......	......	2
	1916	......	......	......	......	......	......
Caps (boudoir)	1915	......	......	......	......	......	......
	1916	......	1	......	......	......	1
Chair caning	1915	......	......	......	......	......	......
	1916	......	......	2	......	......	2
Cigars and cigarettes	1915	......	......	......	1	......	1
	1916	......	......	2	......	......	2
Coats	1915	8	19	18	......	......	45
	1916	18	13	45	3	......	79
Corset covers	1915	......	......	1	......	......	1
	1916	......	2	......	......	......	2
Crochet rings	1915	......	2	6	......	1	9
	1916	......	......	......	......	......	......
Dolls' legs	1915	......	......	......	......	......	......
	1916	......	......	5	......	......	5
Dresses	1915	......	1	......	......	......	1
	1916	......	......	1	......	......	1
Embroidery	1915	17	14	15	22	......	68
	1916	2	4	39	5	......	50
Feathers	1915	4	2	7	1	......	14
	1916	......	......	2	......	......	2
Folding circulars	1915	......	......	2	......	......	3
	1916	......	......	......	......	......	......
Folding handkerchiefs	1915	......	......	1	......	......	1
	1916	......	......	......	......	......	......
Garters	1915	......	......	1	......	......	1
	1916	1	......	4	......	......	5
Gloves	1915	......	1	......	1	......	2
	1916	......	......	......	......	......	......
Hair weaving	1915	......	1	......	......	......	1
	1916	......	......	......	......	......	......
Hat novelties	1915	2	......	......	1	......	3
	1916	......	......	......	1	......	1
Hats	1915	......	......	......	......	......	......
	1916	......	1	1	......	......	2

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* 1915 = year ended Sept. 30, 1915; 1916 = nine months ended June 30, 1916.

Table 13 — CHILDREN UNDER 16 YEARS OF AGE FOUND ILLEGALLY EMPLOYED IN TENEMENT LIVING ROOMS IN NEW YORK CITY: (c) BY HOURS WHEN FOUND AND ARTICLES ON WHICH WORK WAS BEING DONE — (*Concluded*)

		NUMBER WHO WERE FOUND —					
ARTICLES ON WHICH WORK WAS BEING DONE	Period*	In the forenoon	From noon to 3 p. m.	From 3 to 6 p. m.	From 6 to 8 p. m.	After 8 p. m.	Total
Kid curlers	1915	......	2	......	......	......	2
	1916	......	......	......	......	......	......
Lace	1915	......	......	2	......	......	2
	1916	......	......	......	......	......	......
Neckwear	1915	1	......	......	......	......	1
	1916	1	2	......	......	......	3
Night gowns (children's)	1915	......	1	......	......	......	1
	1916	......	......	......	......	......	......
Pants	1915	26	42	35	6	......	109
	1916	30	27	55	8	......	120
Paper bags	1915	......	......	......	1	......	1
	1916	......	......	1	......	......	1
Petticoats (infants')	1915	......	......	......	......	......	......
	1916	......	1	......	......	......	1
Piano felt pads	1915	......	......	......	......	......	......
	1916	......	......	2	......	......	2
Post cards	1915	......	......	......	......	......	......
	1916	1	......	......	......	......	1
Powder puffs	1915	......	......	......	......	......	......
	1916	......	......	......	1	......	1
Ribbon bows	1915	......	......	......	......	......	......
	1916	......	1	......	......	......	1
Sashes (children's cloak)	1915	......	......	1	......	......	1
	1916	......	......	......	......	......	......
Shell cameo stones	1915	......	......	2	......	......	2
	1916	......	......	......	......	......	......
Shirt waists	1915	......	......	......	......	......	......
	1916	......	......	......	1	......	1
Skirts	1915	......	......	......	......	......	......
	1916	......	......	4	......	......	4
Sweaters	1915	1	......	......	......	......	1
	1916	......	......	1	......	......	1
Tags	1915	......	2	......	......	......	2
	1916	......	......	......	......	......	......
Umbrella straps	1915	......	......	1	......	......	1
	1916	......	......	......	......	......	......
Underwear	1915	......	......	3	1	......	4
	1916	......	2	1	......	......	3
Veiling	1915	......	......	1	......	......	1
	1916	......	......	......	......	......	......
Vests	1915	1	......	......	......	......	1
	1916	2	1	......	......	......	3
Total	1915	84	111	159	82	8	444
	1916	61	90	267	53	......	471

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* 1915=year ended September 30, 1915; 1916=nine minths ended June 30, 1916.

Table 13 — CHILDREN UNDER 16 YEARS OF AGE FOUND ILLEGALLY EMPLOYED IN TENEMENT LIVING ROOMS IN NEW YORK CITY: (d) BY BOROUGHS, AGES, AND ATTENDANCE OR NON-ATTENDANCE AT SCHOOL

	NUMBER FOUND IN —					
	YEAR ENDED SEPTEMBER 30, 1915			NINE MONTHS ENDED JUNE 30, 1916		
BOROUGH AND AGES	Attending school	Not attending school	Total	Attending school	Not attending school	Total
Bronx Borough:						
2 to 5 years of age	1	......	1	......	......	......
6 to 10 years of age	10	4	14	8	3	11
11 to 13 years of age	14	8	22	14	......	14
14 to 15 years of age	7	7	14	13	1	14
Total	32	19	*51	35	4	†39
Brooklyn Borough:						
2 to 5 years of age	1	4	5	......	2	2
6 to 10 years of age	7	8	15	26	9	35
11 to 13 years of age	27	11	38	51	5	56
14 to 15 years of age	15	6	21	21	5	26
Total	50	29	*79	98	21	119
Manhattan Borough:						
2 to 5 years of age	2	15	17	3	11	14
6 to 10 years of age	33	76	109	100	25	125
11 to 13 years of age	51	68	119	101	13	114
14 to 15 years of age	31	38	69	48	12	60
Total	117	197	*314	252	61	313
Queens Borough:						
2 to 5 years of age	......	......	......	......	......	......
6 to 10 years of age	......	......	......	......	......	......
11 to 13 years of age	......	......	......	......	......	......
14 to 15 years of age	......	......	......	......	......	......
Total	......	......	......	......	......	......
Richmond Borough:						
2 to 5 years of age	......	......	......	......	......	......
6 to 10 years of age	......	......	......	......	......	......
11 to 13 years of age	......	......	......	......	......	......
14 to 15 years of age	......	......	......	......	......	......
Total	......	......	......	......	......	......
New York City (5 Boroughs):						
2 to 5 years of age	4	19	23	3	13	16
6 to 10 years of age	50	88	138	134	37	171
11 to 13 years of age	92	87	179	166	18	184
14 to 15 years of age	53	51	104	82	18	100
Total	199	245	*444	385	86	†471

* Includes 15 children in Bronx Borough, 8 children in Brooklyn Borough and 44 children in Manhattan Borough who were employed during school vacation period.

† Includes 2 children in Bronx Borough who were employed during school vacation period.

Table 14 — WORK OF MERCANTILE INSPECTORS, BY KINDS OF WORK

	YEAR ENDED SEPTEMBER 30			
	1913	1914	1915	1916*
Regular inspections:				
Mercantile	10,265	22,778	23,367	22,781
Office	855	1,149	380	965
Hotel	27	39	17	21
Bowling alleys	364	343	57	150
Places of amusement	98	103	106	76
Barber shops	84	63	55	28
Shoe polishing stands	60	46	24	45
Total	11,753	24,521	24,006	24,066
Special inspections:				
Mercantile	1,075	4,957	4,880	2,800
Office	15	83	105	37
Hotel	5	2	17	2
Bowling alleys	4	39	1	7
Places of amusement	8	12	5	8
Barber shops	....	....	4	2
Shoe polishing stands	....	10	6	5
Total	1,107	5,103	5,018	2,861
Investigations:				
Complaints	253	913	1,167	1,193
Compliances	4,476	21,472	20,672	16,717
Total	4,729	22,385	21,839	17,910

* Nine months ended June 30, 1916.

Table 15 — WORK OF MERCANTILE INSPECTORS, BY LOCALITIES

	Regular inspections		Special inspections		INVESTIGATIONS OF Complaints		INVESTIGATIONS OF Compliances	
	1915	1916*	1915	1916*	1915	1916*	1915	1916*
New York City	13,858	13,523	4,593	2,436	1,021	1,032	15,545	11,406
Buffalo	3,181	2,743	156	134	41	84	1,100	850
Rochester	912	1,231	30	23	45	10	470	744
Total, first class cities	17,951	17,497	4,779	2,593	1,107	1,126	17,115	13,000
Albany	449	754	42	43	4	13	523	575
Binghamton	†	454	†	12	†	......	†	400
Schenectady	492	440	17	35	5	2	501	251
Syracuse	1,387	2,134	50	62	31	33	521	347
Troy	405	494	69	48	......	8	514	442
Utica	399	1,065	7	14	4	......	260	985
Yonkers	443	465	31	54	7	3	850	717
Other places‡	2,480	763	10	......	9	8	388	......
Grand total	24,006	24,066	5,005	2,861	1,167	1,193	20,672	16,717

* Nine months ended June 30, 1916.

† Not inspected as a second class city until October 1, 1915.

‡ Enforcement of " one day of rest in seven " law.

Table 16 — ORDERS ISSUED BY DIVISION OF MERCANTILE INSPECTION AND COMPLIANCES THEREWITH

SUBJECT	Orders issued	Orders complied with
I. ADMINISTRATION		
1. Posting of laws, permits, notices, etc	5,234	4,971
2. Keeping of records, registers, etc	1	2
3. Reporting to Department	....	....
4. Interfering with inspector	....	....
II. SANITATION		
1. Toilet facilities:		
a. Water closets	12,627	9,547
b. Wash rooms	2,212	1,441
c. Dressing rooms	332	237
2. Cleanliness and repair of salesrooms, etc	940	658
3. Ventilation, heat and humidity	4	1
4. Lighting	8	3
5. Meals	99	93
6. Drinking water and drinking cups	78	62
7. Marking mattresses	7	1
III. ACCIDENT PREVENTION		
1. Machinery	3	2
2. Switchboards	4	3
3. Stairs	456	232
V. CHILDREN		
1. From 14 to 16 years of age:		
a. Shortening hours of labor	139	164
b. Employed in basements	1	....
VI. WOMEN		
1. Employment after childbirth	....	....
2. Seats for women	31	25
3. Shortening hours of labor	591	606
VII. DAY OF REST		
Day of rest	1,116	120
VIII. MISCELLANEOUS		
Payment of wages without deduction for benefit funds	1	1
Total	23,884	18,169

Table 17 — PROSECUTIONS UNDER THE MERCANTILE LAW

SUBJECT OF LAW VIOLATED	No. of cases	RESULTS TO JUNE 30, 1916				
				CONVICTED		
		Pending	Dismissed, acquitted or withdrawn	Sentence suspended	Fined	Fines
(A) Proceedings Instituted before October 1, 1915						
V. CHILDREN						
Under 14 years of age	11	......	2	7	2	$40
From 14 to 16 years:						
Certificates	6	......	1	5	......	......
Hours	5	......	....	5	......	......
VI. WOMEN AND MINORS						
Illegal hours:						
Female minors	5	......	....	3	2	70
Women	3	......	....	3	......	......
VII. DAY OF REST						
Day of rest	13	......	2	1	10	235
Total	43	......	5	24	14	$345
(B) Proceedings Instituted in Current Year						
I. ADMINISTRATION						
Interfering with inspector	4	......	1	2	1	$20
II. SANITATION						
Toilet facilities:						
Water closets	6	1	5	......	......	......
Meals	1	......	....	1	......	......
III. ACCIDENT PREVENTION						
Stairs, etc.:						
Failure to provide hand rail on stairs	1	......	1	......	......	......
V. CHILDREN						
Under 14 years of age	224	10	9	143	62	1,310
From 14 to 16 years:						
Certificates	199	11	8	125	55	1,180
Hours	88	2	1	50	35	700
VI. WOMEN AND MINORS						
Illegal hours:						
Female minors	71	4	1	28	38	765
Women	99	10	4	47	38	850
VII. DAY OF REST						
Day of rest	48	......	7	13	28	570
Total	741	38	37	409	257	$5,395
Grand total	784	38	42	433	271	$5,740

Table 18—VIOLATIONS OF THE LABOR LAW IN MERCANTILE ESTABLISHMENTS REFERRED TO COUNSEL WITHOUT ISSUANCE OF ORDERS IN THE NINE MONTHS ENDED JUNE 30, 1916

SUBJECT OF VIOLATION	Referred	Prosecuted	Not prosecuted by order of commission
(a) *First District*			
V. CHILDREN			
1. Employment of, under 14 years of age	203	201	2
2. From 14 to 16 years:			
a. Employment of, without certificates	195	168	27
b. Employment of, illegal hours	70	63	7
VI. WOMEN AND MINORS			
1. Illegal hours:			
Employing female minors	64	63	1
Employing women	99	86	13
VII. FAILURE TO COMPLY WITH DAY OF REST LAW	66	47	19
Total	697	628	69
(b) *Second District*			
V. CHILDREN			
1. Employment of, under 14 years of age	23	23	....
2. From 14 to 16 years:			
a. Employment of, without certificates	77	31	46
b. Employment of, illegal hours	36	25	11
VI. WOMEN AND MINORS			
1. Illegal hours:			
Employing female minors	8	8	....
Employing male minors	2	....	2
Employing women	25	13	12
VII. FAILURE TO COMPLY WITH DAY OF REST LAW	4	1	3
Total	175	101	74
(c) *Total State*			
V. CHILDREN			
1. Employment of, under 14 years of age	226	224	2
2. From 14 to 16 years:			
a. Employment of, without certificates	272	199	73
b. Employment of, illegal hours	106	88	18
VI. WOMEN AND MINORS			
1. Illegal hours:			
Employing female minors	72	71	1
Employing male minors	2	....	2
Employing women	124	99	25
VII. FAILURE TO COMPLY WITH DAY OF REST LAW	70	48	22
Total	872	729	143

Table 19 — CASES FOR PROSECUTION REFERRED BY THE DIVISION OF MERCANTILE INSPECTION TO DISTRICT ATTORNEYS, AND DISPOSITION THEREOF, IN NINE MONTHS ENDED JUNE 30, 1916

			CASES CLOSED				
					DISPOSITION OF CONVICTED CASES		
						Fined	
SUBJECT OF LAW VIOLATED	County in which violation occurred	Number of cases referred	Dismissed or Acquitted	Convicted	Suspended sentence	Number	Amount
Failure to observe day of rest law	Bronx	9	......	8	5	3	$70
	Kings	17	......	8	4	4	80
	New York	89	1	72	28	44	900
	Richmond	1	......	1	1	......	......
	Albany	1	......	......	......	......	......
	Broome	2	......	......	......	......	......
	Rensselaer	1	......	1	1	......	......
	Schuyler	1	......	......	......	......	......
	Schenectady	1	......	......	......	......	......
	Tompkins	3	3	......	......	......	......
	Total	125	4	90	39	51	$1,050

Table 20 — CHILDREN FOUND ILLEGALLY EMPLOYED IN MERCANTILE ESTABLISHMENTS IN NINE MONTHS ENDED JUNE 30, 1916

		NUMBER OF CHILDREN					
		UNDER 14 YEARS OF AGE		14 TO 16, WORKING WITHOUT CERTIFICATES			
LOCALITY	Number of establishments	Boys	Girls	Boys	Girls	Working illegal hours	Total children
New York City:							
Bronx	178	84	......	92	1	5	182
Manhattan	647	258	7	358	45	36	704
Brooklyn	345	119	1	204	2	39	365
Queens	37	15	......	26	......	7	48
Richmond	1	1	......	......	......	......	1
Total — First District	1,208	477	8	*680	48	87	1,300
Albany	54	23	......	39	3	2	67
Binghamton	20	4	......	22	5	5	36
Buffalo	194	32	4	127	22	30	215
Rochester	30	6	......	18	4	5	33
Schenectady	19	9	......	13	......	......	22
Syracuse	77	20	......	34	15	11	80
Troy	30	7	1	23	2	2	35
Utica	13	2	......	10	1	19	32
Yonkers	36	5	......	30	1	1	37
Total — Second District	473	108	5	†316	†53	75	557
Total State	1,681	585	13	‡996	‡101	162	1,857

* Included in this total is 1 boy who was also working illegal hours.

† Included in this total are 3 boys and 2 girls who were also working illegal hours.

‡ Included in this total are 4 boys and 2 girls who were also working illegal hours.

Table 21 — CHILDREN 14 TO 16 YEARS OF AGE FOUND EMPLOYED IN MERCANTILE ESTABLISHMENTS

	Boys	Girls	Total
New York City	1,953	996	2,949
Bronx	122	11	133
Brooklyn	589	241	830
Manhattan	1,181	734	1,915
Queens	57	8	65
Richmond	4	2	6
Buffalo	456	134	590
Rochester	233	181	414
Total — First class cities: 1916*	2,642	1,311	3,953
1915	1,412	974	2,386
1914	2,073	2,341	4,414
1913	2,062	1,972	4,034
1912	1,320	1,503	2,823
Albany	81	26	107
Binghamton	46	6	52
Schenectady	29	2	31
Syracuse	170	54	224
Troy	27	6	33
Utica	55	28	83
Yonkers	50	1	51
Total — All cities: 1916*	3,100	1,434	4,534
1915	1,563	1,006	2,569
1914	2,347	2,540	4,887

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* Nine months ended June 30, 1916.

Table 22 — ILLEGAL HOURS OR PROHIBITED EMPLOYMENT OF WOMEN OR MALE MINORS OR VIOLATIONS OF DAY OF REST LAW, IN MERCANTILE ESTABLISHMENTS, IN NINE MONTHS ENDED JUNE 30, 1916.

	FIRST INSPECTION DISTRICT		SECOND INSPECTION DISTRICT		TOTAL STATE	
SUBJECT	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed	Number of firms	Number of persons illegally employed
Illegal hours of —						
Women	262	475	50	73	312	548
Male minors	....	....	2	3	2	3
Prohibited employment of —						
Women	....	....	....	....	....	....
Male minors	....	....	....	....	....	....
Day of rest violations	411	689	93	113	504	802

Table 23 — COMPLAINTS AGAINST MERCANTILE ESTABLISHMENTS

SUBJECT		Sustained	Not sustained	Total	Thereof anonymous
ADMINISTRATION					
Posting of laws		......	1	1	1
SANITATION					
Toilet facilities:					
Water closets		81	32	113	25
Wash rooms		5	2	7	1
Dressing rooms		7	1	8	2
Cleanliness or repair of salesrooms		13	6	19	11
Ventilation		1	3	4	2
Meals		4	10	14	10
Drinking cups		1	3	4	......
CHILDREN					
Under 14 years of age		53	60	113	71
From 14 to 16 years of age:					
Without certificates		18	25	43	21
Hours		36	61	97	68
WOMEN AND MALE MINORS					
Hours		127	172	299	221
Employment of women in basement		......	......	......	......
Seats for women		6	1	7	4
MISCELLANEOUS					
Payment of wages		3	1	4	3
Day of rest		153	307	460	374
Total	1916*	508	685	1,193	814
	1915	534	633	1,167	753
	1914	447	466	913	556
	1913	145	108	253	97
	1912	95	140	235	77
	1911	122	100	222	81

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* Nine months ended June 30, 1916.

Table 24 — NATURE OF DISEASES FOUND IN CHILDREN EXAMINED BY MEDICAL INSPECTORS

(Figures not in parentheses are totals for the state; those in parentheses denote cases in the second inspection district.)

Disease and Industry	Number of Children		
	Males	Females	Total
Skin Diseases:			
Acne:			
Bags (cotton and burlap)	1	....	1
Brushes	....	1	1
Clothing	....	12	12
Embroideries	....	1	1
Furniture	....	2	2
Gloves	....	3	3
Metals	3	2	5
Millinery	1	3	4
Mirrors and thermometers	3	1	4
Paper goods	....	1	1
Printing and publishing	1	....	1
Textiles	....	7	7
Tobacco	....	(1) 2	(1) 2
Mercantile establishment	1	....	1
Total	10	(1) 35	(1) 45
Eczema:			
Tobacco	....	(1) 1	(1) 1
Furunculosis:			
Glass, flint	1	....	1
Total — Skin Diseases	11	(2) 36	(2) 47
Eye Diseases:			
Defective Sight:			
Buttons	....	1	1
Candy	....	1	1
Clothing	....	9	9
Embroideries	....	1	1
Furniture	....	2	2
Gloves	....	2	2
Metals	2	3	5
Millinery	....	5	5
Paper goods	....	3	3
Printing and publishing	1	....	1
Textiles	....	2	2
Tobacco	....	(2) 2	(2) 2
Total	3	(2) 31	(2) 34
Inflammation:			
Chemicals	....	1	1
Clothing	....	3	3
Metals	1	....	1
Millinery	....	1	1
Paper goods	....	1	1
Printing and publishing	1	....	1
Textiles	....	1	1
Total	2	7	9
Total — Eye Diseases	5	(2) 38	(2) 43

Table 24 — NATURE OF DISEASES FOUND IN CHILDREN EXAMINED BY MEDICAL INSPECTORS — (*Continued*).

(Figures not in parentheses are totals for the State; those in parentheses denote cases in the second inspection district)

	Number of Children		
Disease and Industry	Males	Females	Total
Nasal Defects:			
Furs	....	1	1
Total — Nasal Defects	....	1	1
Ear Diseases:			
Clothing	....	1	1
Millinery	....	1	1
Printing and publishing	1	....	1
Total — Ear Diseases	1	2	3
Diseases of Teeth and Gums:			
Caries:			
Brushes	....	1	1
Buttons	1	....	1
Candy	....	1	1
Chemicals	....	1	1
Clothing	2	27	29
Embroideries	....	8	8
Flags	....	1	1
Furs	1	....	1
Gloves	(1) 1	(1) 3	(2) 4
Hats and caps, men's	1	....	1
Lace and netting	....	2	2
Laundry	2	....	2
Leather	1	3	4
Matches, safety	1	1	2
Mattresses	....	2	2
Metals	17	12	29
Millinery	....	18	18
Mirrors and thermometers	2	....	2
Musical instruments	3	....	3
Paper goods	5	9	14
Printing and publishing	1	....	1
Textiles	4	19	23
Tobacco	....	(5) 6	(5) 6
Toy novelties	....	1	1
Watch cases and jewelry	1	....	1
Total	(1) 43	(6) 115	(7) 158
Riggs Disease:			
Buttons	....	1	1
Gloves	....	1	1
Textiles	....	3	3
Total	....	5	5
Total — Diseases of Teeth and Gums	(1) 43	(6) 120	(7) 163
Glandular Affections:			
Hypertrophied Tonsils:			
Buttons	....	2	2
Chemicals	1	....	1
Clothing	....	4	4

Table 24 — NATURE OF DISEASES FOUND IN CHILDREN EXAMINED BY MEDICAL INSPECTORS — (*Continued*)

(Figures not in parentheses are totals for the State; those in parentheses denote cases in the second inspection district)

	Number of Children		
Disease and Industry	Males	Females	Total
Glandular Affections — (*Concluded*):			
Hypertrophied Tonsils — (*Concluded*):			
Gloves	....	7	7
Metals	2	....	2
Mirrors and thermometers	7	2	9
Textiles	1	2	3
Tobacco	....	1	1
Total	11	18	29
Goitre:			
Buttons	....	5	5
Clothing	....	(1) 4	(1) 4
Gloves	....	(1) 5	(1) 5
Millinery	....	3	3
Mirrors and thermometers	1	1	2
Printing and publishing	....	1	1
Textiles	(1) 2	13	(1) 15
Tobacco	....	(2) 3	(2) 3
Total	(1) 3	(4) 35	(5) 38
Total — Glandular Affections	(1) 14	(4) 53	(5) 67
Adenoids:			
Chemicals	1	....	1
Clothing	....	2	2
Metals	1	....	1
Millinery	....	2	2
Textiles	1	3	4
Total — Adenoids	3	7	10
Respiratory Diseases:			
Bronchitis:			
Chemicals	....	1	1
Clothing	....	1	1
Furniture	1	....	1
Lace and netting	....	1	1
Leather goods	....	1	1
Millinery	....	1	1
Textiles	....	1	1
Tobacco	....	(1) 1	(1) 1
Total	1	(1) 7	(1) 8
Laryngitis:			
Chemicals	1	....	1
Embroideries	....	1	1
Millinery	....	1	1
Total	1	2	3
Total — Respiratory Diseases	2	(1) 9	(1) 11

Table 24 — NATURE OF DISEASES FOUND IN CHILDREN EXAMINED BY MEDICAL INSPECTORS — (*Continued*)

(Figures not in parentheses are totals for the State; those in parentheses denote cases in the second inspection district)

DISEASE AND INDUSTRY	NUMBER OF CHILDREN		
	Males	Females	Total
Cardiac Diseases:			
Buttons	....	1	1
Clothing	....	1	1
Metals	2	....	2
Mirrors and thermometers	2	....	2
Textiles	....	1	1
Total — Cardiac Diseases	4	3	7
Orthopedic Defects:			
Clothing	....	1	1
Rope and Twine	....	1	1
Total — Orthopedic Defects	....	2	2
Anemia:			
Candy	....	1	1
Chemicals	1	....	1
Clothing	....	4	4
Furniture	....	1	1
Glass, flint	1	....	1
Gloves	(1) 1	1	(1) 2
Metals	....	4	4
Millinery	....	3	3
Mirrors and thermometers	2	2	4
Paper	....	(1) 1	(1) 1
Pencils and pens	....	1	1
Textiles	....	1	1
Tobacco	....	(4) 5	(4) 5
Total — Anaemia	(1) 5	(5) 24	(6) 29
Mercury Poisoning:			
Mirrors and thermometers	6	....	6
Total — Mercury poisoning	6	....	6
Grand total	(3) 94	(20) 295	(23) 389

Table 25 — INDUSTRIAL DISEASES REPORTED UNDER § 65 OF THE LABOR LAW*

(Figures in parentheses denote fatal cases)†

DISEASE AND INDUSTRY	Sept., 1915–Aug., 1916	Sept., 1914–Aug., 1915	Sept., 1913–Aug., 1914	Sept., 1912–Aug., 1913	Sept., 1911–Aug., 1912	Total (5 years)
LEAD POISONING						
Manufacturing:						
White lead	2	11	....	1	7	21
Electric batteries	12	22	(3) 13	(1) 14	21	(4) 82
Smelting	(1) 5	4	1	2	(1) 2	(2) 14
Paints, inks and colors	3	3	(1) 4	(1) 7	2	(2) 19
Printing	(1) 6	....	(2)4	(1) 3	1	(4) 14
Painting (in shops, etc.)	(1) 6	(1) 11	(4) 13	(4) 21	(1) 22	(11) 73
Miscellaneous	(2) 10	(1) 15	(3) 9	(2) 14	10	(8) 58
Total	(5) 44	(2) 66	(13) 44	(9) 62	(2) 65	(31) 281
Building:						
Painting	(7)‡28	(8) 30	(11) 30	(10) 48	(4) 51	(40) 187
Plumbing, etc	1	....	....	1	(2) 3	(2) 5
Total	(7) 29	(8) 30	(11) 30	(10) 49	(6) 54	(42) 192
Other or indefinite	....	(1) 2	....	(2) 3	6	(3)11
Total — lead poisoning	(12) 73	(11) 98	(24) 74	(21) 114	(8) 125	(76) 484
OTHER POISONINGS						
Arsenic	....	....	1	....	4	5
Brass	1	10	2	1	1	15
Mercury	1	1	(1) 1	2	(1) 1	(2) 6
Phosphorus	....	....	....	....	(1) 1	(1) 1
Wood alcohol	(1) 1	....	....	1	....	(1) 2
Total	(1) 3	11	(1) 4	4	(2) 7	(4) 29
ANTHRAX						
Tanning, leather dressing, etc.	(3) §16	(3) 4	(1) 1	(1) 3	2	(8) 26
CAISSON DISEASE						
Shafts, tunnels, etc	(1) 67	7	24	1	(1) 29	(2) 128
Grand total	(17) 159	(14) 120	(26) 103	(22) 122	(11) 163	(90) 667

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* Includes cases reported by employers as accidents.

† Record of fatal cases obtained only from certificates filed with boards of health.

‡ Includes three attacks for one person; counted as three cases.

§ Includes two cases of farmers.

Table 26 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN NINE MONTHS ENDED JUNE 30, 1916

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
ALBANY COUNTY	*271*	*139*
Albany	172	99
Cohoes	57	27
Green Island	10	2
Ravena	1	......
Watervliet	28	11
Remainder	3	......
ALLEGANY COUNTY	*12*	*3*
Andover	4	1
Belmont	......	1
Bolivar	1	......
Cuba	1	......
Wellsville	2	1
Remainder	4	......
BRONX COUNTY (See under New York City).		
BROOME COUNTY	*105*	*41*
Binghamton	101	40
Deposit	3	......
Endicott	......	1
Johnson City	1	......
CATTARAUGUS COUNTY	*71*	*27*
Ellicottville	1	......
Franklinville	6	5
Gowanda	7	1
Olean	38	19
Randolph	2	......
Salamanca	9	1
Remainder	8	1
CAYUGA COUNTY	*73*	*54*
Auburn	70	49
Remainder	3	5
CHAUTAUQUA COUNTY	*89*	*59*
Dunkirk	26	25
Falconer	3	1
Fredonia	1	1
Jamestown	54	27
Silver Creek	4	1
Remainder	1	4
CHEMUNG COUNTY	*55*	*22*
Elmira	51	17
Elmira Heights	......	2
Remainder	4	3
CHENANGO COUNTY	*16*	*9*
Afton	1	......
Bainbridge	......	1
New Berlin	4	......
Norwich	10	5
Oxford	......	1
Sherburne	1	2
CLINTON COUNTY	*4*	*6*
Keeseville	2	6
Plattsburg	1	......
Remainder	1	......
COLUMBIA COUNTY	*28*	*18*
Chatham	1	......
Hudson	9	2
Kinderhook	3	4
Philmont	2	1
Valatie	2	7
Remainder	11	4
CORTLAND COUNTY	*40*	*13*
Cortland	24	8
Homer	9	2
McGraw	2	2
Marathon	1	1
Remainder	4	......
DELAWARE COUNTY	*3*	*1*
Walton	2	......
Remainder	1	1
DUTCHESS COUNTY	*105*	*72*
Beacon	26	13
Fishkill	7	......
Millerton	3	4
Poughkeepsie	59	41
Red Hook	2	1
Rhinebeck	1	......
Wappingers Falls	5	13
Remainder	2	......
ERIE COUNTY	*1,838*	*821*
Akron	4	2
Alden	3	......
Angola	4	1
Buffalo	1,683	765
Depew	19	3
East Aurora	5	4
Farnham	4	4
Hamburg	3	......
Lackawanna	23	13
Lancaster	17	1
North Collins	1	......
Sloan	2	1
Springville	1	......
Tonawanda	47	16
Williamsville	2	......
Remainder	20	11
ESSEX COUNTY	*5*	......
Keeseville (See Clinton County).		
Ticonderoga	2	......
Remainder	3	......

Table 26 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN NINE MONTHS ENDED JUNE 30, 1916 — (*Continued*)

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
FRANKLIN COUNTY	*6*	*4*
Malone	......	1
Tupper Lake	6	3
FULTON COUNTY	*131*	*73*
Dolgeville (See Herkimer County).		
Gloversville	94	57
Johnstown	29	11
Mayfield	2	1
Northville	3	1
Remainder	3	3
GENESEE COUNTY	*21*	*13*
Batavia	11	11
Le Roy	9	2
Oakfield	1	......
GREENE COUNTY	*21*	*4*
Athens	2	1
Catskill	17	3
Coxsackie	2	......
HERKIMER COUNTY	*94*	*29*
Dolgeville	10	5
Frankfort	8	3
Herkimer	16	3
Ilion	16	3
Little Falls	41	11
Middleville	......	1
Mohawk	1	3
Remainder	2	......
JEFFERSON COUNTY	*38*	*22*
Adams	6	3
Alexandria Bay	1	......
Brownville	2	......
Carthage	1	......
Theresa	2	2
Watertown	21	14
West Carthage	3	3
Remainder	2	......
KINGS COUNTY (See under New York City).		
LEWIS COUNTY	*2*	......
Lowville	2	......
LIVINGSTON COUNTY	*10*	*5*
Avon	1	2
Dansville	4	3
Lima	1	......
Mt. Morris	2	......
Remainder	2	......
MADISON COUNTY	*10*	*2*
Canastota	4	2
Chittenango	2	......
Hamilton	1	......
Oneida	2	......
Wampsville	1	......
MONROE COUNTY	*367*	*204*
Brockport	3	1
East Rochester	16	......
Fairport	9	2
Gates	13	8
Honeoye Falls	1	1
Pittsford	2	......
Rochester	315	185
Webster	1	......
Remainder	7	7
MONTGOMERY COUNTY	*147*	*70*
Amsterdam	129	53
Canajoharie	3	4
Fonda	......	1
Fort Johnson	1	2
Fort Plain	4	6
Hagaman	1	......
St. Johnsville	9	4
NASSAU COUNTY	*32*	*20*
East Rockaway	1	......
Floral Park	......	1
Hempstead	27	17
Lynbrook	1	1
Rockville Centre	3	1
NEW YORK COUNTY (see under New York City).		
NIAGARA COUNTY	*205*	*85*
La Salle	4	3
Lockport	35	26
Middleport	4	3
Newfane	2	......
Niagara Falls	96	40
North Tonawanda	59	11
Wilson	1	......
Remainder	4	2
ONEIDA COUNTY	*323*	*253*
Boonville	2	1
Camden	1	2
Clayville	4	5
Clinton	1	......
Forestport	1	......
New Hartford	2	2
Oriskany	2	1
Oriskany Falls	2	2
Rome	26	19
Sangerfield	2	1
Utica	242	201
Vernon	......	2
Waterville	3	1

Table 26 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN NINE MONTHS ENDED JUNE 30, 1916 — *(Continued)*

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
ONEIDA COUNTY—*(Concl'd)*:		
Whitesboro	14	3
Yorkville	8	4
Remainder	13	9
ONONDAGA COUNTY	*444*	*258*
Baldwinsville	4	......
East Syracuse	5	1
Eastwood	1	......
Fayetteville	......	2
Liverpool	5	4
Manlius	......	1
Marcellus	7	3
Skaneateles	4	6
Solvay	26	11
Syracuse	386	224
Remainder	6	6
ONTARIO COUNTY	*23*	*14*
Canandaigua	3	1
Clifton Springs	1	......
Geneva	9	2
Manchester	......	1
Phelps	3	4
Shortsville	3	......
Victor	4	6
ORANGE COUNTY	*100*	*45*
Cornwall	3	......
Highland Falls	3	......
Middletown	14	13
Newburgh	47	15
New Windsor	6	3
Port Jervis	8	3
Walden	14	7
Warwick	4	1
Woodbury	1	......
Remainder	......	3
ORLEANS COUNTY	*31*	*19*
Albion	5	3
Carlton	2	1
Holley	......	1
Kendall	3	5
Medina	19	7
Ridgeway	2	......
Shelby	......	1
Remainder	......	1
OSWEGO COUNTY	*86*	*34*
Fulton	43	7
Lacona	1	1
Mexico	7	......
Minetto	4	......
Oswego	25	22
Pulaski	1	......
Redfield	1	......
Scriba	2	1
Volney	1	2
Remainder	1	1

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
OTSEGO COUNTY	*8*	*9*
Oneonta	5	8
Richfield	2	1
Unadilla	1	......
PUTNAM COUNTY	*6*	*4*
Brewster	3	2
Cold Spring	1	2
Remainder	2	......
QUEENS (See under New York City).		
RENSSELAER COUNTY	*157*	*98*
Castleton	2	2
Hoosick Falls	7	4
Poestenkill	......	1
Rensselaer	3	2
Sandlake	6	4
Troy	137	84
Valley Falls	......	1
Remainder	2	......
RICHMOND (See under New York City).		
ROCKLAND COUNTY	*28*	*18*
Haverstraw	2	5
Hillburn	1	1
Nyack	1	1
Ramapo	3	1
South Nyack	1	1
Spring Valley	8	2
Suffern	5	2
Upper Nyack	1	......
West Haverstraw	2	......
Remainder	4	5
ST. LAWRENCE COUNTY	*30*	*14*
Madrid	2	......
Massena	3	3
Morristown	3	......
Norwood	1	1
Ogdensburg	14	10
Potsdam	5	......
Remainder	2	......
SARATOGA COUNTY	*48*	*24*
Ballston Spa	4	1
Corinth	4	1
Mechanicville	7	2
Saratoga Springs	9	4
Schuylerville	......	3
South Glens Falls	2	4
Stillwater	7	......
Victory Mills	3	3
Waterford	12	6

Table 26 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN NINE MONTHS ENDED JUNE 30, 1916 — *(Continued)*

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO —	
	Boys	Girls
SCHENECTADY COUNTY	*294*	*44*
Schenectady	285	42
Scotia	9	2
SCHOHARIE COUNTY	*6*	*4*
Cobleskill	......	2
Esperance	1	1
Richmondville	5	1
SCHUYLER COUNTY	*7*	*3*
Watkins	4	......
Remainder	3	3
SENECA COUNTY	*9*	*2*
Seneca Falls	7	2
Waterloo	2	......
STEUBEN COUNTY	*44*	*20*
Bath	2	......
Canisteo	1	1
Corning	8	3
Hammondsport	8	4
Hornell	17	8
Howard	......	1
Painted Post	1	1
Urbana	4	2
Wayland	3	......
SUFFOLK COUNTY	*58*	*27*
Amityville	2	......
Babylon	2	......
East Hampton	3	......
Greenport	1	1
Islip	10	6
Patchogue	24	11
Sag Harbor	10	9
SULLIVAN COUNTY	*1*	......
Mamakating	1	......
TIOGA COUNTY	*32*	*11*
Barton	4	......
Owego	10	9
Waverly	18	2
TOMPKINS COUNTY	*18*	*4*
Groton	2	......
Ithaca	8	3
Lansing	8	1
ULSTER COUNTY	*85*	*56*
Ellenville	1	......
Kingston	68	53
Lloyd	......	2
Marbletown	2	......
Rosendale	5	......
Saugerties	3	1
Remainder	6	......
WARREN COUNTY	*22*	*16*
Glens Falls	16	15
Queensbury	2	......
Warrensburg	4	1
WASHINGTON COUNTY	*23*	*29*
Cambridge	2	2
Fort Edward	1	......
Granville	......	11
Greenwich	6	4
Kingsbury	2	3
Whitehall	12	9
WAYNE COUNTY	*27*	*24*
Arcadia	2	......
Lyons	5	3
Marion	......	3
Newark	7	9
Ontario	3	1
Palmyra	......	5
Rose	......	1
Sodus	8	2
Wolcott	1	......
Remainder	1	......
WESTCHESTER COUNTY	*275*	*178*
Ardsley	1	......
Bronxville	2	......
Dobbs Ferry	1	......
Elmsford	2	......
Hastings-on-Hudson	2	......
Mamaroneck	3	1
Mount Kisco	2	3
Mount Pleasant	......	2
Mount Vernon	74	51
New Rochelle	24	15
North Pelham	1	......
North Tarrytown	......	6
Ossining	3	4
Peekskill	8	7
Pelham	2	......
Pelham Manor	3	......
Port Chester	6	14
Rye	1	......
Tarrytown	......	2
Tuckahoe	8	4
White Plains	11	9
Yonkers	113	58
Remainder	8	2

Table 26 — CHILD LABOR CERTIFICATES REPORTED ISSUED IN NINE MONTHS ENDED JUNE 30, 1916 — (*Concluded*)

LOCALITY	NUMBER OF CERTIFICATES ISSUED TO — [illegible]		LOCALITY	Number of certificates issued
	Boys	Girls		
WYOMING COUNTY..........	*39*	*19*	NEW YORK CITY....................	*32,379*
Arcade................	2	....	Bronx Borough..................	3,598
Attica................	3	....	Brooklyn Borough...............	12,003
Eagle.................	1	....	Manhattan Borough..............	13,774
Gainesville...........	1	....	Queens Borough.................	2,538
Perry.................	9	12	Richmond Borough...............	466
Silver Springs........	1	....		
Warsaw................	22	7	Total State.................	*41,457*
YATES COUNTY............	*8*	*4*		
Penn Yan..............	8	2		
Starkey...............	......	2		
Total State (exclusive of New York City)..........	*6,031*	*3,047*		

Part IV

REPORT OF BUREAU OF WORKMEN'S COMPENSATION

(1) REPORT OF SECOND DEPUTY COMMISSIONER

(In Charge of Bureau of Workmen's Compensation)

To the Industrial Commission:

Pursuant to your request for a report of the Bureau of Workmen's Compensation for the period of October 1, 1915 to June 30, 1916, inclusive, in order that the department may accommodate itself to the new statutory fiscal year, the following is submitted:

The first three months of the period for which this report is made were covered in the last report of this bureau; and, at the time said report was written, April, 1916, so much of the period had elapsed that it stood in the proper perspective. For this reason said report may well be read in connection with this one, and, for this reason also, this report is relatively brief.

No marked changes in the compensation law or in bureau administration characterized this period. Rather was it a time of steady progress and development along lines already laid down. It was, therefore, uneventful of change except in the great increase in the number of industrial accidents and the number of claims arising therefrom. The constant growth of industrial activity not only produced more business for the bureau, but the ratio of increase was constantly accelerated. In April it had swelled to a 27 per cent increase over the average of the previous year, and by the end of June this increase had reached 29.5 per cent. Nor did it stop then. We had entered upon the new year and our budget had been made without adequate provision for the unexpected tide of new claims. The bureau, therefore, was subjected to constant stress, but it went through the period remarkably well under the circumstances and at the end thereof had pending fewer claims than at the beginning. This effect may be attributed to the development of organization and to an extraordinary devotion to duty on the part of our entire force.

This period marked the virtual disappearance of department activity with respect to claims filed under the first compensation law and a thorough adaptation to the new law. I refer to the new plan under which employees and employers have first the opportunity to enter into agreements with each other for the receipt and payment of compensation according to law and under which also the payment of compensation is made by employers directly rather than through the bureau. This required a closing of accounts as between our cashier and the various insurance carriers with the proper refunding of balances, etc.

In this connection it may be well to refer to the matter of advance payments. When the law was amended, section 20-a was added giving employers the right to make payments in advance of either claims or agreements. This resulted in a practice, happily not universal, which I believe was not foreseen or intended by the lawmakers, namely, that payments might be made and receipts taken therefor and no further action recorded than the mere filing of such receipts with the bureau. This deprived the bureau of the information necessary to establish the fact of strict compliance with the law's requirements, and, to some extent, remained throughout the period an uncorrected abuse. The bureau lacked help to enable it properly to handle such receipts and, in fact, all receipts. However, it may be said that the practice referred to was limited to but relatively few participants and, so far as we know, was not practiced by any of the larger carriers. At the time the present report is written, January, 1917, the Commission has issued new rules requiring that claims or agreements be filed following all advance payments and has provided a new form of receipt for advance payments to contain sufficient information to indicate the nature and extent of disability and to what degree the requirements of the law have been satisfied by payments so made.

During the period the proportion of agreements made and claims filed directly with the Commission is indicated by the changing ratio of 7:3 to 6:4.

Interesting experiments were conducted with reference to the calendar. By the calendar we mean the cases noticed for public hearings. It may be noted that while under the law no hearings may be had as of right by any party interested, except upon formal application, yet the Commission by first considering all cases in public has been able not only to expedite the work by effecting easy reconciliation of cases in dispute, but it has also been able thus quickly to disseminate correct information about the law. This practice naturally has always brought to the hearings a large number of claimants, employers and other interested parties until, in fact, the Commission has been visited by about 70,000 persons a year. Such proceedings are hearings within the full meaning of the law and yet logically are quite as much claim examinations. This being so, we attempted to record more written testimony and the better to perfect all cases on paper. This, of course, is entirely possible, but no sooner was it attempted than we noticed a distinct increase in the time between the filing of a claim and its final disposition. In short, the period of the claim's going through the department was lengthened. This can easily be explained by saying that, in addition to the general development of facts about the claim, it is always necessary to have all jurisdictional facts established in order to justify the Commission's action, it being a department of record. But this was not understood or appreciated upon the part of claimants who constantly clamored for speed. We, therefore, eased up in the effort to entirely complete all cases on paper and sent them to the calendar again, even in increasing numbers. So we are well settled in the practice of large calendars. Every man has his day in court, can state his own case and plead his own cause. We are thus able to attain a degree of speed otherwise not possible.

The cases in which all facts are well developed and there is entire agreement are placed on what are called an " agreed facts " calendar. Such calendars require only formal approval on the part of the Commission and then hasten away to final notices and closing of cases without the necessity of notices of hearings with the attendant five days' delay. "Agreements approved" by a comparison of them with the other papers filed in the case, first notices, etc., take the same course. Agreements "disputed" follow the course of the regular public hearings in which all differences are resolved. Disputes in agreement cases arise over the duration of disability, for time of disability is the one element not subject to agreement under the rules of the Commission. This for obvious reasons. The agreement is entered into in an early state of the case and goes to the point of jurisdiction, wages, description of injury, etc., but manifestly cannot cover the period of disability; hence, disputes.

Counting the two days each week that the Commission gives to compensation matters, it may be said that an equivalent of twelve full days sittings a week in the hearing of compensation cases is now had.

And here is the place again to emphasize the usefulness and indispensableness of a high class and efficient medical organization in connection with the bureau or in connection with any bureau or administration of workmen's compensation. Nobody but a high class physician or surgeon can give proper advice with respect to the nature and extent of disability and its relation to the accident. However, other reports of the bureau have gone into this matter. Appended tables will disclose the great amount of work accomplished in our medical division. One of the physicians goes to Albany every Wednesday and the Albany office and all the district offices are compelled to employ physicians temporarily to advise them with respect to claims. Our branch offices do not enjoy the constant services of regular medical employees, but have been able to employ, temporarily, satisfactory and well qualified medical assistants.

The most troublesome phase of the compensation law is involved in the medical question. The present conditions are not to the entire liking of claimants or employers (or their insurance carriers) and much criticism is heard from the medical fraternity. It seems that with much advantage the medical sections of the law might well be amended. My suggestions as to the manner of amendment have already gone to the Commission and perhaps will be reflected in the Commission's general recommendations to the Legislature. Suffice it to say that whatever criticism is merited cannot be leveled at the Commission or its administration of the compensation law whose powers in the matters are quite limited.

Our chief delays have been in the cases in which employers were in default of compliance with the requirement of law to insure compensation to their injured employees. In these cases we are forced to make collections through the courts. The contrast in the proceedings under the compensation law, without the embarrassment of technical rules of procedure, is thrown into high light against the slower processes of the courts with their technicalities and unpreventable delays.

I would recommend enforcement of the punitive statute making it a misdemeanor on the part of employers for failure to secure the payment of compensation as required by law. Our calendars contain more than twenty cases a week in which the employers are not insured. This deprives claimants of compensation and overtaxes our department in prosecuting actions for the collection of unpaid awards.

You have already received from the state insurance fund the semi-annual reports for the last half of 1915 and the first half of 1916 which in a thorough manner cover the period of this report.

The legal bureau bears a close relation to the compensation bureau and its report will be informative of its activities.

It may be truly said that the entire State yields scarcely a murmur of complaint about compensation cases. It is doubtful if the State has ever had a department that has been compelled to deal with so many different persons whose immediate and actual needs have prompted a more insistent demand, not only for action, but for that final action and determination of claims which will result in putting money into the hands of those justly entitled to it. When we say, therefore, that this is being done so effectively as to put down justifiable complaints we are saying the utmost, for the central purpose of the law is thus fulfilled.

With respect to the clamor for speed, we are now able to say that speed is no longer the great desideratum, for it has been attained. It should never be asked for at the expense of accuracy. Then, too, the general public must accommodate itself to the compensation law by establishing a proper system of credits with respect to groceries, rent and the other necessaries of life. It is out of reason to require or to look for a state department to dispense immediate relief right and left without proper investigation. We have expended much energy in handling cases out of order. We shall continue to do so, and with a right good will in deserving cases, but we are forced to combat any tendency to enlarge the practice to satisfy all comers. State departments are often condemned without justice and without mercy and this is all the more true because too many citizens think of public employees as mere job holders and prone to idleness, low ideals and even to worse things. This attitude of the public mind usually closes its ears to explanations or defense on the part of public servants; but the truth nevertheless remains the truth and our bureau is one bureau which will proceed along proper lines whether it is understood or misunderstood. We invite criticism. We invite investigation. We invite helpful suggestions. We will adopt them. But too much is at stake and our business is of too great magnitude to be whipped about by those who respond but to the impulses of the hour and who condemn and forget and pass on to new fields all within the week.

In death cases we have had to make an additional endeavor to prevent delays. The cost of such cases is so great that we have suspected that first hearings have been taken advantage of for the sake of delay. We are now holding preliminary hearings and forcing all parties in interest to produce testimony and to produce it quickly and to develop all testimony together so that the ends of truth, rather than the advantage of rebuttal, may be conserved.

In this same connection we express a hope that the Commission will discourage the practice to grant rehearings upon but slight pretexts. Such rehearings are asked for often for no other reason than merely to obtain a second chance at a case. They are often asked for without a clear statement of sufficient reasons for such requests.

A word of tribute to the legal fraternity is not out of place. The bar has accepted the compensation law with the best of good grace. When lawyers participate in cases they do so with the thought of justice uppermost in their minds and without the expectation of such fees as obtained in the days of liability cases when contingent fees was the necessary rule. We have been troubled, somewhat, by nonprofessional practitioners who work mainly along the lines of lump sums. They lie in wait for claimants and induce them and coach them into making applications for lump sums only to prey upon them afterward. We are meeting this condition with firmness and are doing our best in a very practical manner to discourage the practice. I will take opportunity here to denounce these "next friends." They are a nuisance. This can be said without at all discouraging any man from seeking the counsel and advice of any real friend or good lawyer.

The branch offices of the bureau at Brooklyn, Buffalo, Rochester and Syracuse have so well demonstrated their worth that it is worthy the consideration of the Commission as to whether or not their functions should not be so extended as to give them immediately the handling of all claims arising in their respective districts, except Brooklyn, whose contiguity to the big New York office renders such extension unnecessary.

The end of the period marked the date at which numerous amendments to the law should become effective, chief among which were the increased coverage by the inclusion of numerous employments and by the provision for the voluntary election by employers, not otherwise under the law, to adopt the compensation plan for themselves and for their employees. The latter required the preparation of proper new forms and arrangements to handle them. As it turned out many thousands of employers filed such notices of election, evidencing a well-night universal desire to make the compensation plan a permanent one for all industry. It is significant to note that but one employee in the State has elected not to become subject to the compensation law.

In the tables below will be found a summary of reports of injuries, claims made and disposed of, etc. The following explanation of terms preceding the tables should be noted:

"C-1 No Claims" means first reports of injuries received from injured workmen which clearly indicate that the disability is of less than two weeks' duration and that no claim for disability award will be made. All such papers are filed in high division alphabetical indexes to be had quickly in connection with claims or inquiries if subsequently such may be made. In the event of no such demand, after six months they are stored away.

"C-2 No Claims" means first reports of injuries received from employers in such cases.

"C-1 Claims" means first reports of injuries received from injured workmen indicating the probability of a claim for compensation to follow. If a disability of ten days or longer is indicated, the reports are counted under this heading; for, while no compensation is paid for the first two weeks, such cases are likely to develop into claims.

"C-2 Claims" means first reports of injuries received from employers in such cases.

"C-3 Claims for compensation" means claims for compensation actually filed.

"On-calendar and disposed of" means that cases have been considered finally and awards made or denied and thus closed.

"Pending" indicates the number of claims filed with the commission and not yet examined and prepared for the calendar. These comprise incomplete cases as well as those which are complete and not yet examined.

	Oct. 1, 1915 to June 30, 1916	July 1, 1914 to Sept. 30, 1915	July 1, 1914 to June 30, 1916
C-1 No claims	33,087	87,706	120,793
C-2 No claims	131,996	223,907	355,903
C-1 Claims	23,302	59,999	83,301
C-2 Claims	43,527	67,257	110,784
C-3 Claims for compensation	14,017	43,504	57,521
On calendar and disposed of	13,764	42,065	55,829
Pending	253	1,439	1,692
C-103 Agreements	26,001	8,458	34,459
On calendar and disposed of	24,851	7,481	32,332
Pending	1,150	977	2,127
Deaths reported	942	1,304	2,246
Claims and agreements filed	821	1,050	1,871
On calendar	773	971	1,744
Pending	48	79	127

	Oct. 1, 1915 to June 30, 1916	July 23, 1914 to Sept. 30, 1915	Total
Physical examinations of claimants	6,177	6,999	13,176
Re-examinations	990	551	1,541
Total	7,167	7,550	14,717
Opinions rendered on claim papers in disability cases without physical examinations	215	3,104	3,319
Opinions rendered on claim papers in death cases	45	115	160
Opinions interpreting X-ray plates	91	21	112
No diagnoses	48	....	48
Total	399	3,240	3,639

CLASSIFICATION OF PHYSICAL EXAMINATIONS

	OCTOBER 1, 1915 TO JUNE 30, 1916		JULY 23, 1914 TO SEPTEMBER 30, 1915		JULY 23, 1914 TO JUNE 30, 1916	
	Examinations	Re-examinations	Examinations	Re-examinations	Examinations	Re-examinations
Fractures	1,760	501	1,835	204	3,595	702
Infections	774	132	1,444	90	2,218	225
Contusions	952	125	1,085	90	2,037	215
Lacerations	897	92	564	22	1,461	114
Amputations	536	12	732	36	1,268	48
Burns	97	6	89	5	186	11
Miscellaneous	1,161	122	1,250	104	2,411	226
	6,177	990	6,999	551	13,176	1,541

MONTHLY DETAIL OF PHYSICAL EXAMINATIONS COVERING PERIOD FROM OCTOBER 1, 1915 TO JUNE 30, 1916

	Examinations	Re-examinations
October, 1915	730	47
November	890	190
December	694	32
January, 1916	770	10
February	537	122
March	673	158
April	662	123
May	555	148
June	666	160
Total	6,177	990

This report will not contain the statistics and further analysis of cost, of causes and of results of accidents as is desired, the reason being that its period does not correspond to a natural statistical period; and while most of the claims have been thoroughly analyzed by your excellent statistical department, it is not so completed and tabulated for the given periods as will allow its use in this report. The next report will contain all that may be desired. In the table of claims to be seen herein everything will be self-explanatory, except the diminished number of deaths shown for the 1916 period. I am somewhat at a loss to account for the startling increase in claims without the corresponding increase in death claims. Two probable causes may be recited: First, the undetermined question of jurisdiction of the Commission over interstate cases may have caused many of them to be settled under the federal law, rather than under the state law; second, it may be that the safety work promulgated throughout the State and arising from various sources is beginning to bear fruit. It is true that any attempt to prevent accidents will be directed against the causes of the more serious accidents and, therefore, the first fruits will be the reduction of deaths. If this be true it is gratifying, for not only will the more serious accidents be first prevented, but cost will be thus most effectively reduced, since the total cost of deaths is about 45 per cent of all benefits under the compensation law.

No occasion should be passed to emphasize the need of safety methods, safety instruction and general education and propaganda in this direction. All agree that it is better to prevent accidents than to have to compensate the losses arising therefrom. All likewise agree that the majority of industrial accidents are preventable. What a fruitful field, therefore, is offered for meritorious work, and the best of it is that so many proper incentives exist to encourage the work, individual good, private saving, relief of distress, public economy, etc. It is today within the power of the employers of the State to diminish by one-half the number of industrial accidents.

The bureau still continues to reap real benefits from its opportunity to reach the public, especially its employers, through the publication of the department, *The Bulletin.* Since the files are obtainable by all interested parties, much is omitted from this report that may easily be found in *The Bulletin* and to which reference is made. Especially have we gone into the discussion there of the question of lump sum settlements, causes of delays in adjudication of claims, the medical question, etc., which constitute the vital problems of administration.

The following facts will be illuminating as constituting the background against which the compensation law of this State operates. The figures are given in round numbers and yet are very accurate approximations of exact conditions.

There are in the State 200,000 employers; 2,000,000 workmen are under the law; they receive an annual total wage of $1,000,000,000; there are 315,000 accidents a year, excluding those which cause no loss of time other than the day, turn or shift in which the accidents happen or that require no other medical aid than first aid; this is 1,000 accidents a day; of these all require medical aid; the average cost of medical aid is $10 per case; there are annually 60,000 claims for cash benefits; this is 5,000 a month; the average cash benefit received is $160; no cash benefits are paid for the first two weeks of disability; there are 1,200 deaths a year; the average death benefit is $3,250; the total annual benefits are now running $12,000,000, including medical; this is $1,000,000 a month; the average compensation wage is $9 a week; the Commission conducts its own insurance department, the State fund, which does a business from $1,500,000 to $2,000,000 a year; the compensation bureau employs about 300 people, including the state fund; about 70,000 people visit the bureau each year; there are besides the principal office in Albany, branch offices in New York, Brooklyn, Rochester, Buffalo and Syracuse; the cost of handling claims is less than 3 per cent of benefits and less than 2 per cent of premiums; the Commission maintains its own post-office, information bureau, telephone exchange, etc.; there are two general claims offices; there are six deputy commissioners beside the deputy commissioner in charge and there are also the very important offices of chief of claims, manager of the state fund, chief actuary and cashier.

Finally, I am able to report that the bureau is constantly in better tone and has become institutionalized. Hard work and faithfulness characterizes its every effort and uniform courtesy to the public and claimants is the rule.

WILLIAM C. ARCHER,
Second Deputy Commissioner.

FINANCIAL ACCOUNT OF INDUSTRIAL COMMISSION WITH SELF INSURERS, STOCK AND MUTUAL COMPANIES, AND AGGREGATE TRUST FUND, UNDER THE COMPENSATION LAW, FOR NINE MONTHS ENDED JUNE 30, 1916.

SELF INSURERS' ACCOUNT

Receipts:		
From carriers	$110,496 88	
Interest on self insurers' securities	168,352 05	
Total		$278,848 93
Disbursements:		
Awards paid	$157,703 33	
Return of cash deposits	51,243 26	
Interest on self insurers' securities	168,352 05	
Check returned — insufficient funds	10 00	
Exchange on out-of-town checks	1 76	
Total		377,310 00
Securities deposited		259,000 00
Securities exchanged		2,870,400 00
Securities refunded		357,000 00

STOCK AND MUTUAL COMPANIES' ACCOUNT

Receipts:		
From carriers	$381,187 21	
Total		$384,187 21
Disbursements:		
Awards paid	$369,556 16	
Return of cash deposits	68,415 77	
Exchange on out-of-town checks	1 49	
Total		$438,003 42

AGGREGATE TRUST FUND

Receipts:		
From carriers	$53,797 40	
Interest	10 52	
Total		$53,807 92
Disbursements:		
Awards paid as per cash book	$1,960 10	
Award paid but not entered during this period	4 84	
Collection charges on out-of-town check	4 97	
Transferred to State Treasurer, $3,757.92.		
Total		$1,969 91

(2) REPORT OF STATE INSURANCE FUND

To the Industrial Commission:

CONDITION OF THE FUND

The growth of the State Insurance Fund continued during the year 1916 at about the same rate as for the preceding year. The number of policyholders increased from 8,507 to 9,966, or an increase of 1,459, as compared with an increase of 1,382 during the year 1915. The amount of premiums in force rose from $674,973.64 on December 31, 1915, to $797,743.31 on December 31, 1916. The net premiums written during the year amounted to $2,048,128.91. The total losses paid during the year amounted to $762,436.38, and the addition to loss reserves was $1,127,792.82. The amount of loss reserves on December 31, 1916, was $2,008,228.03. The surplus at the close of the year was $253,179.44. The investments on December 31, 1916, amounted to $1,854,642.50, and the cash on deposit to $251,403.68.

The State Insurance Fund is the second largest carrier of workmen's compensation insurance in the State. About 15 per cent of the total volume of workmen's compensation insurance in the State is carried by the Fund. The financial strength of the Fund is indicated by the size of the loss reserves and surplus, amounting to over two and one-quarter million dollars.

The loss ratio for the year was 92.4 per cent. This represents a sharp increase over the loss ratio for the preceding year. The main cause of the increase was the abnormal activity of business, which resulted naturally in a rise in the accident rate. An increase in the frequency and severity of accidents is an inevitable accompaniment of any period of rapid industrial expansion. At such times plants are run under high pressure to increase the output; new and inexperienced employees are added to the force in considerable numbers; working space is frequently crowded by the installation of new machines; the construction of new buildings, which are rushed to completion as rapidly as possible, further increases the accident frequency; less attention is given to matters of safety organization and accident prevention. At the same time the average cost per accident rose during the year in consequence of the general advance of wages, although this factor in the increasing cost of compensation was offset to some extent by the additional premiums yielded by the larger pay-rolls of employers.

The expense ratio for the year was 9.2 per cent. This is a most satisfactory showing, and contrasts in a striking way with an average expense ratio of approximately 40 per cent for the stock companies and of somewhat less than 20 per cent for the mutual companies. In consequence of the amendment of the law by the last legislature, the Fund was placed upon a self-supporting basis June 30, 1916, and required to pay its own expenses after that date, instead of receiving the benefit of the expense subsidy until December 31, 1916, as originally provided. The transition to a self-supporting basis entailed an increase of less than 10 per cent in the cost of insurance to policyholders, as this small percentage covers the entire overhead of the Fund.

RESERVES

The marked increase in the number and severity of accidents consequent upon the unprecedented industrial activity of the year 1916, to which reference has already been made, called for large additions to the loss reserves of the Fund. The total amount of loss payments and loss reserves for the year was $1,890,229.34, as contrasted with $820,652.96 for the previous year. The amount of the loss reserves was $2,008,228.03 on December 31, 1916, the corresponding total at the end of the previous year having been $880,435.11. It may be well to explain that the loss reserves are the amounts set aside on the basis of conservative valuation of all outstanding claims to provide for the future payments on incurred losses and to carry all claims to full maturity. The loss ratio for 1916, as previously stated, was 92.4 per cent, as against a loss ratio of 64.6 per cent for 1915. It is a matter of satisfaction that the Fund had ample resources to meet the extraordinary requirements with respect to loss reserves that resulted from the great business revival during 1916.

An amendment of the Workmen's Compensation Law, passed by the Legislature of 1916, gives the State Insurance Department supervision of the reserves and also of the investments of the State Insurance Fund. The provision with respect to reserves requires that they be set up according to rules which shall be approved by the State Superintendent of Insurance, who is further authorized to examine into the condition of the Fund at any time for the purpose of determining the adequacy of the reserves. This amendment affords an additional guarantee of the financial stability of the Fund. The reserves have been set up from the beginning on a conservative basis with a view to absolute adequacy, but, as they were not subject to the supervision of the State Insurance Department for the first two and one-half years, it was possible for the critics of the Fund to cast doubt upon their adequacy. The amendment is a welcome safeguard, as it makes the State Superintendent of Insurance responsible for the maintenance of proper reserves.

DIVIDENDS

In consequence of the unfavorable experience due to unusual business conditions previously mentioned, no dividends were declared in the six general groups for the two policy periods covering the year ended December 31, 1916. The fact that the Fund was required by amendment of the law in 1916 to pay its own expenses of administration after June 30 was also a factor in the decision to suspend the payment of dividends in the general groups. Dividends were credited in the special groups that showed an earned surplus for the policy periods of 1916, as heretofore. It should be explained that the dividends in the special groups have been credited only after setting up ample reserves on all outstanding claims and after deducting the 5 per cent contribution to surplus required by law.

RATES

The same condition that led to the passage of dividends, namely, the increased cost of compensation due to the extraordinary expansion of industry in 1916, also called for a revision of rates. In the last annual report, for the year 1915, it was stated that the experience to date indicated that the rates then in force, which averaged approximately 20 per cent lower than the rates of the casualty companies, were adequate to cover losses, to provide reserve and surplus funds and to yield dividends to policyholders. The later experience, as developed during the year 1916, showed that these rates were not adequate to meet the greatly increased cost of compensation caused by the unusual activity of business. Consequently it was decided, in September, 1916, to adopt a revised schedule of rates, to be put into effect January 1, 1917. At the same time the basic manual issued by the Compensation Inspection Rating Board was adopted for the use of the Fund.

In this connection it should be explained that the first revision of the rates of the State Insurance Fund was made January 1, 1915, and at that time an independent manual was adopted, different in respect to the plan of classification from that used by the casualty companies. This practice involved certain inconveniences. In particular it made it difficult to compare the rates of the Fund with the rates of the companies on risks that were differently classified in the two manuals; it gave rise to complications in the merit rating of risks by the Compensation Inspection Rating Board; and it made it difficult for the Fund to utilize the experience of other insurance carriers, compiled under the classification of the board manuals, as a basis for rate revision. The adoption of the board manual placed the Fund on a uniform basis with the companies as respects the classification of risks.

The new rates as adopted in September, 1916, to go into effect January 1, 1917, were, in general, the rates established by the Compensation Inspection Rating Board and approved by the State Insurance Department for the use of the companies, less a differential of 10 per cent. Exceptions were made, however, in the case of certain classifications for which the experience of the Fund showed the lower rates previously in force to have been adequate, and in such cases the 10 per cent differential was not applied, but the existing rates were retained or were advanced only to a reasonable and proper extent. Furthermore, on certain other classifications, for which the experience of the Fund showed the business to have been unprofitable, the new rates were made somewhat higher than the corresponding rates of the companies. Due notice in advance was given to all policyholders whose premiums were affected by the changes in rates. In general, the new rates enable employers to obtain insurance in the Fund at an initial cost at least 10 per cent lower than they could obtain it from one of the companies.

The State Insurance Fund was the first among the carriers of compensation insurance to recognize the fact that the changed industrial situation called for a readjustment of rates and to take action accordingly. Shortly after the announcement of the rate revision by the Fund, the State Superintendent of Insurance addressed a circular to all liability companies, both stock and mutual, calling their attention to the fact that the existing rates, as shown by an inquiry conducted by his department, " are inadequate for the extraordinary load to which, for some time past, they have been subject." It was pointed out in this communication that the loss ratio of the companies was 68 per cent for 1915, as contrasted with 51 per cent for 1914, or an increase of 33 per cent. A further increase of the loss ratio was predicted for 1916 because of the continued increase in general industrial activity throughout the State, the increased familiarity of the public with/the operation of the Workmen's Compensation Law, the tendency toward reduction of rates, and the application of schedule and experience rating.

In response to the communication of the State Superintendent of Insurance, the Workmen's Compensation Service Bureau, which is the rate making organization of the stock companies, voted at its annual meeting, Tuesday, December 12, that an immediate revision of rates should be undertaken, and invited the Standing Committee on Workmen's Compensation Rates to assist and participate in the work of revision. This committee, it should be explained, was created to continue the work of the Joint Conference on Workmen's Compensation Rates, which in 1915 revised the classifications and rates in the manual used by the companies writing workmen's compensation insurance. The committee serves as a kind of clearing house for proposed amendments of classifications and rates, and thus helps to bring about a standardization of rating and underwriting practice in the field of workmen's compensation insurance throughout the country. The membership consists of the New York State Insurance Department, State Insurance Fund, three representatives of stock companies and two of mutual companies. This committee accepted the invitation of the Workmen's Compensation Service Bureau to assist in the rate revision. Later the actual work of revising the rates was left to this committee by authorization of the bureau and the Compensation Inspection Rating Board, and the committee was enlarged for the purpose of this work by the addition of two stock company and two mutual company members. The new rates, prepared by this committee on the basis of the experience developed in eleven States under workmen's compensation laws, were duly approved by the State Insurance Department and put into effect by the casualty companies March 31, 1917. The average extent of the increase in the rates was from 20 to 25 per cent.

MERIT AND EXPERIENCE RATING

Important changes were made during the year in the plan of merit and experience rating as administered by the Workmen's Compensation Rating Board for all insurance carriers, including the State Insurance Fund. Experience showed that the schedule first adopted for the purpose of merit-rating risks, known as the Universal Analytic Schedule, was not well balanced, the percentages of rate reductions under this schedule greatly exceeding the percentages of rate increases. The net result of merit rating according to this schedule was a reduction of manual rates on merit-rated risks amounting to approximately 20 per cent. In order to secure a better balance between merit reductions and merit increases, a new schedule, known as the Industrial Compensation Rating Schedule, was adopted. Under the new schedule, the credits for good safety conditions in plants were reduced considerably, and the debits for bad conditions were increased somewhat, with a view to securing a due proportion between rate reductions and rate increases resulting from merit rating. This change went into effect September 30, 1916.

The plan of experience rating, in force during the first two years of operation of the Workmen's Compensation Law, proved highly unsatisfactory, as was pointed out in the last annual report. This plan was intended to provide for rate reductions in recognition of a favorable experience, and rate increases in consequence of an unfavorable experience, in addition to the merit rating, based upon conditions in the plant, as determined by inspection. The experience rating plan also applies to risks not subject to merit rating, such as contracting and public service risks. The main objections to the plan which was first adopted were that the experience developed prior to the enactment of the Workmen's Compensation Law was admitted for the purpose of experience rating, that the plan was not compulsory and consequently was applied only to preferred risks submitted by the carriers, and that by reason of this discriminatory application of the plan the reductions of rates through experience rating were not offset by increases, so that the tendency was to impair the adequacy of the rates.

Through the initiative of the State Insurance Department, a committee of the Compensation Inspection Rating Board was appointed to devise a new plan of experience rating. This committee reported a plan which was adopted by the Rating Board to be put into effect June 30, 1916. On the whole, the new plan is a distinct improvement upon the old. Under this plan only experience developed under the Workmen's Compensation Law is considered for the purpose of experience rating. The plan is compulsory, and all risks that comply with the qualifications fixed in the plan for experience rating must be submitted to the Rating Board. The qualifications limit the application of the plan to such risks as have been insured for a period of not less than two years under the New York Workmen's Compensation Law, and further require a minimum pay-roll of $100,000, and an earned premium of $500 for manufacturing risks, and a minimum payroll of $50,000 and an earned premium of $500 for contracting and public service risks. Maximum debits and credits are fixed according to the amount of premium, the maximum debit or credit for risks with an earned premium of $500 being fixed at 5 per cent and for risks with an earned premium of $5,000 at 20 per cent, with proportionately graded debits and credits between these two limits. The debits and credits are based upon the loss ratio as computed from the experience data submitted. For risks with a loss ratio from 40 to 65 per cent, termed the "neutral zone," no experience rating is allowed. For loss ratios under 40 per cent down to zero, credits are granted in proportionate gradation up to the maximum. For loss ratios over 65 per cent up to 100 per cent, debits are charged in proportionate gradation up to the maximum. The new plan promises to eliminate the worst abuses previously connected with experience rating and to bring about a more equitable administration of this method of modifying the manual rates to fit the particular conditions of individual risks.

During the year 4,230 merit rating reports were received by the fund from the Compensation Inspection Rating Board, of which 2,528 showed rate reductions and 970 rate advances. The reports included, in all cases, a supplementary statement pointing out the defects in the plant which resulted in an increase of rate or prevented a reduction of rate, and this information was communicated to the policyholders through the Safety Engineering Department of the fund with recommendations for the improvement of conditions.

ACCIDENTS AND INSPECTIONS

The total number of accidents reported by policyholders of the Fund during the year ending December 31, 1916, was 21,086, an increase of over 60 per cent upon the total of the preceding year, which was 12,783. The number of compensatable cases was 6,923, including 163 death cases, 1 total permanent disability case, 651 partial permanent disability cases, and 6,108 temporary total disability cases. Medical or hospital service was furnished by the fund in 3,503 cases, the average cost per case being $15.92. The total number of safety inspections made during the year was 1,463. The number of safety recommendations issued to policyholders was approximately 12,000.

AMENDMENTS OF THE LAW

In the last annual report the question of common law liability was discussed and attention was called to the need of some amendment of the Workmen's Compensation Law which would remove all possible doubt as to the scope of the act and the coverance afforded by the State Insurance Fund policy. It was pointed out that this could be accomplished either by extending the scope of the act or by authorizing the Fund to issue a policy covering not only liability for compensation, but also liability at common law. The former remedy was applied through the amendments of 1916. These amendments, which became effective June 1, 1916, made the coverance under the policy of the State Insurance Fund absolutely certain and complete, and removed the questions relating to liability at common law from the realm of controversy. The amendments which accomplished this end were:

1. An amendment broadening the scope of the definition of employee in the act to include not only a person engaged in one of the enumerated hazardous employments, but also a person in the service of an employer whose principal business is that of conducting one of such employments. This amendment removes any uncertainty as to the inclusion of employees, such as clerks, and stenographers, whose individual occupations are not hazardous, but are in the service of an employer carrying on a hazardous employment.

2. An amendment permitting an employer not carrying on one of the enumerated hazardous employments, or who, while carrying on one of such employments, has in his service an employee not included within the act, to elect to bring all his employees under the act and thus to include them in the coverance of his compensation insurance policy. Such election on the part of the employer is made by posting notices about his place of business and filing with the Commission a written statement signifying his acceptance of compensation for all his employees. The election then becomes binding on the employee, unless the latter files with the employer and the Commission written notice that he elects not to be subject to the act, within 20 days after the election by the employer or at the time of entering into the contract of service, as the case may be. This amendment enables an employer voluntarily to bring all his employees under the act and thus to include them in his compensation insurance.

3. An amendment making clear, specific and complete the abolition of liability at common law under section 11. The amended section provides that the liability of an employer for

compensation "shall be exclusive and in place of any other liability whatsoever to such employee, his personal representatives, husband, parents, dependents, or next of kin, or anyone otherwise entitled to recover damages at common law or otherwise on account of such injury or death." This amendment wipes out every conceivable trace of liability outside the act for employers who come within its provisions and provide insurance in one of the prescribed ways. As the preceding amendment enables an employer to bring all his employees under the act, this amendment of section 11 relieves an employer making such election of all liability at common law on account of injuries or death sustained by any person in his service. The two amendments taken together make the coverance of a State Insurance Fund policy, issued to an employer electing compensation for all his employees, absolutely complete.

These amendments dispose of the questions raised in connection with the cases of Shinnick v. Clover Farms Company, Bargey v. Massaro Macaroni Company, and Gleisner v. Gross & Herbener, which have been exploited in literature issued by the casualty companies as showing liability alleged not to be covered by the State Insurance Fund policy. Without entering into a review of these cases in this connection, it is sufficient to state that under the amended act no liability could arise, in any case such as those cited, on which a policyholder in the Fund would not be fully protected. The policy issued by the Fund to an employer who elects to provide compensation for all his employees, in accordance with the provisions of the amended act, covers completely all existing liability on account of injuries or death sustained by his employees. The policy gives complete release from all liability under the Workmen's Compensation Act through the well known provision of section 53, and all liability outside the act is wiped out entirely by the amendment of section 11. The joint effect of these two provisions is to give employers insured in the Fund absolutely perfect coverance, so far as concerns liability in connection with injuries to employees.

APPROPRIATION FOR THE FUND

The Fund has been handicapped during the past year by the lack of a sufficient appropriation to provide an adequate working force. The present staff is not adequate to the needs of the large and growing business of the Fund. Although the Fund is now required to pay its own expenses, the money to finance its operations is provided in the first instance by legislative appropriation, and the premium income cannot be used directly for administration expenses.

In this connection, it should be pointed out that the State Insurance Fund is different from other departments of the state government in two essential respects. First, it is a competitive business proposition. The Fund, unlike other governmental bureaus, is subject to the spur of competition; it must give satisfactory service at low cost or fail in competition with private insurance companies. If the Fund is to be maintained as an effective competitor of the casualty companies — and the interests of employers and employees at large demand this — it must be properly equipped to do its work. In the second place, the expenses of the Fund are not paid finally out of the State treasury, but are merely advanced in this way. It is supported by the policyholders, not by the taxpayers; the former pay the bills and they are entitled to proper service in return for their insurance premiums. These two conditions should be given due consideration in connection with the budgetary requirements of the Fund, and appropriations ample to meet the legitimate demands of its business should at all times be provided ungrudgingly by the legislature.

F. SPENCER BALDWIN,
Manager State Insurance Fund.

COMPARATIVE STATEMENT OF BUSINESS OF STATE INSURANCE FUND

	Six months ended Dec. 31, 1914	Twelve months ended Dec. 31, 1915	Twelve months ended Dec. 31, 1916
Number of policyholders	7,125	8,507	9,966
Premiums in force	$689,764 94	$674,973 64	$797,743 31
Net premiums written	689,764 94	1,293,612 75	2,048,128 91
Earned premiums	645,154 02	1,269,432 61	2,045,925 52
Expenses incurred	82,446 57	193,232 97	188,020 08
Expense ratio to earned premiums	13%	15.2%	9.2%
Losses and loss reserve	393,572 12	820,652 96	1,890,229 34
Loss ratio to earned premiums	60.9%	64.6%	92.4%
Dividends allowed	....	347,541 45	240,084 74
Investments	538,937 50	1,059,824 91	1,854,642 50

FINANCIAL STATEMENT OF STATE INSURANCE FUND DECEMBER 31, 1916

ASSETS

Investments	Book value	$1,803,493 58	
	Market value of investments over book value	51,148 92	
			$1,854,642 50
Cash on deposit			251,403 68
Accrued interest			24,796 44
Policyholders accounts			383,919 89
Total			$2,514,762 51

LIABILITIES

Reserve for losses			$2,008,228 03
Reserve for deferred claim expense			60,246 84
Reserve for unearned premiums			94,634 12
Reserve for expenses			98,474 08
			$2,261,583 07
Surplus			253,179 44
Total			$2,514,762 51

INCOME AND DISBURSEMENTS FOR YEAR ENDED DECEMBER 31, 1916

INCOME

Net premium income				$2,048,128 91
Interest income:				
Interest received on investments		$60,573 06		
Accrued interest on investments December 31, 1916		23,973 74		
		$84,546 80		
Less — Accrued interest on investments December 31, 1915	$14,510 39			
Accrued interest on bonds acquired	6,810 43	21,320 82		
Net interest earned on investments			$63,225 98	
Interest received on deposits		$2,637 90		
Accrued interest on deposits December 31, 1916		822 70		
		$3,460 60		
Less — Accrued interest on deposits December 31, 1915		959 60		
Total interest on deposits			2,501 00	
Total interest income				65,726 98
Total income				$2,113,855 89

DISBURSEMENTS

Losses paid:		
Medical	$123,640 44	
Temporary total disability	361,753 17	
Permanent total disability	232 52	
Dismemberment	196,846 39	
Death — Funeral expenses	13,216 78	
Death — Dependency	66,747 08	
Total losses paid		$762,436 38
Bank exchange charges		564 66
Profit and loss charges		195 59
Increase in reserves:		
For losses	$1,127,792 82	
For deferred claim expense	33,833 89	
For unearned premiums	25,842 66	
For expenses	98,474 08	
Total increase in reserves		1,285,943 45
Total disbursements and increase in reserves		$2,049,140 08
Surplus earned (year ended December 31, 1916)		$64,715 81
Surplus (December 31, 1915)		377,399 45
		$442,115 26
Add increase in value of investments		51,148 92
		$493,264 18
Dividends allowed (year ended December 31, 1916)		240,084 74
Surplus		$253,179 44

INVESTMENTS

DESCRIPTION	INTEREST		Maturity	Book value	Par value	Rate to obtain market value	Market value
	Rate	How paid					
New York City, 210, V. 16–211, V. 16	4½	M. & S.	3/ 1/64	$120,078 13	$125,000 00	105	$131,250 00
City of Brooklyn, comptroller's receipts, 327–8–9	5	J. & J.	7/ 1/19	178,937 50	175,000 00	102	178,500 00
C. S. New York City water supply, W. 15–251	4½	M. & S.	3/ 1/64	149,625 00	150,000 00	105	157,500 00
C. S. New York City registered, 1189, V. 10	4	M. & N.	5/ 1/59	104,895 00	108,000 00	102	110,160 00
C. S. New York City registered, 456, V. 11	4	M. & N.	5/ 1/59	1,942 50	2,000 00	102	2,040 00
C. S. New York City registered	4	M. & N.	5/ 1/59	1,947 50	2,000 00	102	2,040 00
C. S. New York City registered	4	M. & N.	5/ 1/59	973 75	1,000 00	102	1,020 00
C. S. New York City registered, 9677, V	4	M. & N.	11/ 1/56	35,982 50	37,000 00	101	37,370 00
C. S. New York City registered	4	M. & N.	5/ 1/59	23,906 25	25,000 00	102	25,500 00
C. S. New York City registered	4½	M. & S.	3/ 1/64	24,906 25	25,000 00	105	26,250 00
City of Albany bonds, 67–71; river front improvement bonds, 656–700; intercepting sewer bonds	4½	J. & D.	6/ 1/55	50,562 50	50,000 00	109	54,500 00
City of New York bonds	4½	M. & S.	9/ 1/60	24,531 25	25,000 00	105	26,250 00
St. Lawrence county bonds, 543–557	4½	J. & J.	1/ 1/35	15,436 35	15,000 00	102	15,300 00
St. Lawrence county bonds, 558–572	4½	J. & J.	1/ 1/36	15,452 40	15,000 00	102	15,300 00
St. Lawrence county bonds, 573–587	4½	J. & J.	1/ 1/37	15,467 85	15,000 00	102	15,300 00
St. Lawrence county bonds, 598–602	4½	J. & J.	1/ 1/38	5,160 85	5,000 00	102	5,100 00
City of New York, registered	4½	J. & D.	6/ 1/65	50,937 50	50,000 00	109	54,500 00
City of New York, construction of R. T. R. R., R. 13, No. 222	4½	J. & D.	6/ 1/65	1,020 00	1,000 00	109	1,090 00
City of New York, water supply, W. 16, 231	4½	J. & D.	6/ 1/65	49,980 00	49,000 00	109	53,410 00
Village of Dobbs Ferry, registered, 51–54	4.4	F. & A.	8/ 1/28	4,059 8732	4,000 00	102	4,080 00
Village of Dobbs Ferry, registered, 55–60	4.4	F. & A.	8/ 1/29	6,089 8098	6,000 00	102	6,120 00
Village of Dobbs Ferry, registered, 61–66	4.4	F. & A.	8/ 1/30	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 67–72	4.4	F. & A.	8/ 1/31	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 73–78	4.4	F. & A.	8/ 1/32	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 79–84	4.4	F. & A.	8/ 1/33	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 85–90	4.4	F. & A.	8/ 1/34	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 91–96	4.4	F. & A.	8/ 1/35	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 97–102	4.4	F. & A.	8/ 1/36	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 103–108	4.4	F. & A.	8/ 1/37	6,089 8098	6,000 00	103	6,180 00
Village of Dobbs Ferry, registered, 109–114	4.4	F. & A.	8/ 1/38	6,089 8098	6,000 00	104	6,240 00
Village of Dobbs Ferry, registered, 115–120	4.4	F. & A.	8/ 1/39	6,089 8098	6,000 00	104	6,240 00
Village of Dobbs Ferry, registered, 121–126	4.4	F. & A.	8/ 1/40	6,089 8098	6,000 00	104	6,240 00
Village of Dobbs Ferry, registered, 127–132	4.4	F. & A.	8/ 1/41	6,089 8098	6,000 00	104	6,240 00
Village of Dobbs Ferry, registered, 133–138	4.4	F. & A.	8/ 1/42	6,089 8098	6,000 00	104	6,240 00
Village of Dobbs Ferry, registered, 139–144	4.4	F. & A.	8/ 1/43	6,089 8098	6,000 00	104	6,240 00
Village of Dobbs Ferry, registered, 145–150	4.4	F. & A.	8/ 1/44	6,089 8098	6,000 00	104	6,240 00

INVESTMENTS — (*Continued*)

Description	Interest		Maturity	Book value	Par value	Rate to obtain market value	Market value
	Rate	How paid					
North Hempstead, water bonds, certificate No. 1	5	M. & S.	9/ 1/20	$2,143 00	$2,000 00	103	$2,060 00
North Hempstead, water bonds, certificate No. 2	5	M. & S.	9/ 1/21	2,143 00	2,000 00	104	2,080 00
North Hempstead, water bonds, certificate No. 3	5	M. & S.	9/ 1/22	2,143 00	2,000 00	105	2,100 00
North Hempstead, water bonds, certificate No. 4	5	M. & S.	9/ 1/23	2,143 00	2,000 00	106	2,120 00
North Hempstead, water bonds, certificate No. 5	5	M. & S.	9/ 1/24	2,143 00	2,000 00	107	2,140 00
North Hempstead, water bonds, certificate No. 6	5	M. & S.	9/ 1/25	2,143 00	2,000 00	108	2,160 00
North Hempstead, water bonds, certificate No. 7	5	M. & S.	9/ 1/26	2,143 00	2,000 00	108	2,160 00
North Hempstead, water bonds, certificate No. 8	5	M. & S.	9/ 1/27	2,143 00	2,000 00	109	2,180 00
North Hempstead, water bonds, certificate No. 9	5	M. & S.	9/ 1/28	2,143 00	2,000 00	110	2,200 00
North Hempstead, water bonds, certificate No. 10	5	M. & S.	9/ 1/29	2,143 00	2,000 00	110	2,200 00
North Hempstead, water bonds, certificate No. 11	5	M. & S.	9/ 1/30	2,143 00	2,000 00	111	2,220 00
North Hempstead, water bonds, certificate No. 12	5	M. & S.	9/ 1/31	2,143 00	2,000 00	112	2,240 00
North Hempstead, water bonds, certificate No. 13	5	M. & S.	9/ 1/32	2,143 00	2,000 00	112	2,240 00
North Hempstead, water bonds, certificate No. 14	5	M. & S.	9/ 1/33	2,143 00	2,000 00	113	2,260 00
North Hempstead, water bonds, certificate No. 15	5	M. & S.	9/ 1/34	2,143 00	2,000 00	113	2,260 00
County of Westchester, sewer bonds, 721–740	4½	J. & J.	1/ 1/49	21,825 00	20,000 00	114	22,800 00
County of Westchester, sewer bonds, 811–830	4½	J. & J.	1/ 1/51	21,876 00	20,000 00	114	22,800 00
County of Westchester, sewer bonds, 856–875	4½	J. & J.	1/ 1/52	21,900 00	20,000 00	115	23,000 00
County of Westchester, sewer bonds, 901–920	4½	J. & J.	1/ 1/53	21,924 00	20,000 00	115	23,000 00
County of Westchester, sewer bonds, 946–965	4½	J. & J.	1/ 1/54	21,946 00	20,000 00	115	23,000 00
City of Niagara Falls, grade crossing, 131–140	4½	J. & J.	1/ 1/49	11,006 65	10,000 00	111	11,100 00
City of Niagara Falls, grade crossing, 141–150	4½	J. & J.	1/ 1/50	11,021 45	10,000 00	111	11,100 00
City of Niagara Falls, grade crossing, 152–156	4½	J. & J.	1/ 1/51	5,517 84	5,000 00	111	5,550 00
Mt. Vernon, school bonds, 419–428	4½	M. & N.	5/ 2/53	11,172 12	10,000 00	112	11,200 00
Mt. Vernon, school bonds, 429–448	4½	M. & N.	5/ 2/54	22,372 00	20,000 00	112	22,400 00
Mt. Vernon, school bonds, 449–468	4½	M. & N.	5/ 2/54	22,398 70	20,000 00	112	22,400 00
City of Batavia, improvement bonds, 109–116	4¼	J. & J.	1/ 1/29	8,334 40	8,000 00	102	8,160 00
City of Batavia, improvement bonds, 118–125	4¼	J. & J.	1/ 1/30	8,334 40	8,000 00	103	8,240 00
City of Batavia, improvement bonds, 127–134	4¼	J. & J.	1/ 1/31	8,334 40	8,000 00	103	8,240 00
City of Batavia, improvement bonds, 136–143	4¼	J. & J.	1/ 1/32	8,334 40	8,000 00	103	8,240 00
City of Batavia, improvement bonds, 145–152	4¼	J. & J.	1/ 1/33	8,334 40	8,000 00	103	8,240 00
City of Batavia, improvement bonds, 154–161	4¼	J. & J.	1/ 1/34	8,334 40	8,000 00	103	8,240 00
City of Batavia, improvement bonds, 163–170	4¼	J. & J.	1/ 1/35	8,334 40	8,000 00	103	8,240 00
City of Batavia, improvement bonds, 172–179	4¼	J. & J.	1/ 1/36	8,334 40	8,000 00	103	8,240 0
City of Batavia, improvement bonds, 117	4¼	J. & J.	1/ 1/29	781 35	750 00	102	765 0
City of Batavia, improvement bonds, 126	4¼	J. & J.	1/ 1/30	781 35	750 00	103	772 5
City of Batavia, improvement bonds, 135	4¼	J. & J.	1/ 1/31	781 35	750 00	103	772 5

INVESTMENTS — (*Continued*)

City of Batavia, improvement bonds, 144	4½	J. & J.	1/ 1/32	781 35	750 00	103	772 50
City of Batavia, improvement bonds, 153	4½	J. & J.	1/ 1/33	781 35	750 00	103	772 50
City of Batavia, improvement bonds, 162	4½	J. & J.	1/ 1/34	781 35	750 00	103	772 50
City of Batavia, improvement bonds, 171	4½	J. & J.	1/ 1/35	781 35	750 00	103	772 50
City of Batavia, improvement bonds, 180	4½	J. & J.	1/ 1/36	781 35	750 00	103	772 50
City of Niagara Falls, grade crossing, 151 and 157–160	4½	J. & J.	1/ 1/51	5,519 84	5,000 00	111	5,550 00
City of Niagara Falls, grade crossing, 161–164	4½	J. & J.	1/ 1/52	3,311 89	3,000 00	111	3,330 00
County of Erie, highway bonds, 106–120	4	M. & N.	5/ 1/43	15,356 25	15,000 00	102	15,300 00
County of Erie, highway bonds, 121–135	4	M. & N.	5/ 1/44	15,364 11	15,000 00	102	15,300 00
County of Erie, highway bonds, 136–150	4	M. & N.	5/ 1/45	15,370 66	15,000 00	102	15,300 00
County of Erie, highway bonds, 151–180	4	M. & N.	5/ 1/46	30,757 86	30,000 00	102	30,600 00
City of New York, certificate No. 813, W. 13, $16,000; certificate No. 989, R. 11, $9,000	4½	M. & S.	3/ 1/62	25,718 75	25,000 00	105	26,250 00
City of Mt. Vernon, city hall certificates, Nos. 1–15	4½	M. & N.	5/ 1/56	15,899 85	15,000 00	108	16,200 00
City of Mt. Vernon, city hall certificates, Nos. 121–140	4½	M. & N.	5/ 1/62	21,266 60	20,000 00	110	22,000 00
City of Yonkers fire bureau equipment, 136	4½	A. & O.	6/ 1/28	3,112 88	3,000 00	103	3,090 00
City of Yonkers, fire bureau equipment, 137	4½	A. & O.	6/ 1/29	3,112 88	3,000 00	104	3,120 00
City of Yonkers, fire bureau equipment, 138	4½	A. & O.	6/ 1/30	3,112 88	3,000 00	104	3,120 00
City of Yonkers, fire bureau equipment, 140	4½	A. & O.	6/ 1/23	1,037 63	1,000 00	102	1,020 00
City of Yonkers, hospital equipment, 127	4½	A. & O.	6/ 1/28	3,112 88	3,000 00	103	3,090 00
City of Yonkers, hospital equipment, 128	4½	A. & O.	6/ 1/29	3,112 88	3,000 00	104	3,120 00
City of Yonkers, hospital equipment, 129	4½	A. & O.	6/ 1/30	3,112 88	3,000 00	104	3,120 00
City of Yonkers, hospital equipment, 130	4½	A. & O.	6/ 1/31	3,112 88	3,000 00	104	3,120 00
City of Yonkers, hospital equipment, 131	4½	A. & O.	6/ 1/32	3,112 88	3,000 00	104	3,120 00
City of Yonkers, hospital equipment, 132	4½	A. & O.	6/ 1/33	3,112 88	3,000 00	105	3,150 00
City of Yonkers, hospital equipment, 133	4½	A. & O.	6/ 1/34	3,112 88	3,000 00	105	3,150 00
City of Yonkers, hospital equipment, 134	4½	A. & O.	6/ 1/35	3,112 88	3,000 00	105	3,150 00
City of Yonkers, water equipment, 1288	4½	A. & O.	6/ 1/28	4,150 51	4,000 00	103	4,120 00
City of Yonkers, water equipment, 1289	4½	A. & O.	6/ 1/29	4,150 51	4,000 00	104	4,160 00
City of Yonkers, water equipment, 1290	4½	A. & O.	6/ 1/30	4,150 51	4,000 00	104	4,160 00
City of Yonkers, water equipment, 1291	4½	A. & O.	6/ 1/31	4,150 51	4,000 00	104	4,160 00
City of Yonkers, water equipment, 1292	4½	A. & O.	6/ 1/32	4,150 51	4,000 00	104	4,160 00
City of Yonkers, water equipment, 1293	4½	A. & O.	6/ 1/33	4,150 51	4,000 00	105	4,200 00
City of Yonkers, water equipment, 1294	4½	A. & O.	6/ 1/34	4,150 51	4,000 00	105	4,200 00
City of Yonkers, water equipment, 1295	4½	A. & O.	6/ 1/35	4,150 51	4,000 00	105	4,200 00
City of Yonkers, water equipment, 1296	4½	A. & O.	6/ 1/36	4,150 51	4,000 00	105	4,200 00
City of Yonkers, water equipment, 1297	4½	A. & O.	6/ 1/37	4,150 50	4,000 00	105	4,200 00
City of Yonkers, water equipment, 1298	4½	A. & O.	6/ 1/38	4,150 50	4,000 00	105	4,200 00
City of Yonkers, water equipment, 1299	4½	A. & O.	6/ 1/39	4,150 50	4,000 00	106	4,240 00
City of Yonkers, water equipment, 1300	4½	A. & O.	6/ 1/40	4,150 50	4,000 00	106	4,240 00
City of Yonkers, water equipment, 1301	4½	A. & O.	6/ 1/41	4,150 50	4,000 00	106	4,240 00
City of Yonkers, water equipment, 1302	4½	A. & O.	6/ 1/42	4,150 50	4,000 00	106	4,240 00
City of Yonkers, water equipment, 1303	4½	A. & O.	6/ 1/43	4,150 50	4,000 00	106	4,240 00
City of Yonkers, water equipment, 1304	4½	A. & O.	6/ 1/44	4,150 50	4,000 00	106	4,240 00
City of Yonkers, water equipment, 1305	4½	A. & O.	6/ 1/45	4,150 50	4,000 00	106	4,240 00
City of Yonkers, water equipment, 1306	4½	A. & O.	6/ 1/46	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1307	4½	A. & O.	6/ 1/47	4,150 50	4,000 00	107	4,280 00

INVESTMENTS — *(Concluded)*

DESCRIPTION	INTEREST		Maturity	Book value	Par value	Rate to obtain market value	Market value
	Rate	How paid					
City of Yonkers, water equipment, 1308	4½	A. & O.	6/ 1/48	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1309	4½	A. & O.	6/ 1/49	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1310	4½	A. & O.	6/ 1/50	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1311	4½	A. & O.	6/ 1/51	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1312	4½	A. & O.	6/ 1/52	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1313	4½	A. & O.	6/ 1/53	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1314	4½	A. & O.	6/ 1/54	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1315	4½	A. & O.	6/ 1/55	4,150 50	4,000 00	107	4,280 00
City of Yonkers, water equipment, 1316	4½	A. & O.	6/ 1/56	4,150 50	4,000 00	108	4,320 00
New York City special revenue bonds, S. R. No. 2, certificate No. 77	4½	A. & O.	4/ 1/30	206,736 00	200,000 00	103	206,000 00
				$1,803,493 58	$1,763,000 00	......	$1,854,642 50

Part V

REPORT OF BUREAU OF MEDIATION AND ARBITRATION

REPORT OF THIRD DEPUTY COMMISSIONER

(In Charge of Bureau of Mediation and Arbitration)

To the Industrial Commission:

I have the honor to submit the following report of the operations of this Bureau for the period beginning October 1, 1915, and ending June 30, 1916.

The number of industrial disputes recorded in this period is 328, some of which were general strikes affecting several plants or employers but only one class of employees in a particular locality. The number of persons directly involved in these disputes was 222,325 and the number indirectly involved or temporarily thrown out of employment by the strike, although not active strikers, was 31,629. The number of working days lost in this period by those directly involved in these disputes was 8,114,438; by those indirectly involved, 1,466,725, or a total of 9,581,163.

Demand for an increase of wages caused the strikes in a great majority of these disputes, a total of 270 strikes out of the 328 recorded arising from such demands. Demand for recognition of union was a principal cause of 26 strikes in this period. Strikes arose in 13 cases out of a demand for shorter hours of labor, and in 5 instances out of unsatisfactory working conditions. In no case recorded during this period was a reduction in wages given as a cause of the dispute, and in no case was longer hours of labor required of employees given as a cause of strike. One sympathetic strike was recorded during this period.

Out of this total of 328 disputes recorded in this period, 120 strikes were successful or resulted in the strikers receiving their demands, 99 strikes were partly successful and 109 were lost.

During this period the Bureau intervened in 96 disputes, arranged 52 conferences and was successful in adjusting 54 disputes. Twenty-seven requests were received by the Bureau for intervention. One dispute concerning piece work prices in a shoe factory in Brooklyn was adjusted by arbitration upon request of both parties, M. J. Reagan, one of the officers of the Bureau, acting as arbitrator.

Out of this total of 328 strikes, 85 occurred in the metal, machines and conveyances trades, 76 in transportation, 38 in the building industry, 27 in textiles, 18 in stone, clay and glass products and 17 in clothing and millinery industries.

Two inquiries were held by the Bureau into the causes of strikes, by direction of the Industrial Commission — one into the cause of the electricians' strike at Buffalo in May, 1916, and one into the strike of motormen and conductors on the Buffalo Southern Railway in June, 1916.

Of the strikes occurring in transportation, one involving 458 motormen, conductors and shop men employed by the trolley lines operating in Schenectady, led to complete stoppage of traffic on those lines for one day. Intervention by the Bureau led to a settlement of this strike and resumption of service, the matters in dispute being referred to arbitration. A strike occurred on the Buffalo Southern Railway, a suburban trolley line in Erie county, on May 24, involving 20 conductors, 17 motormen, 2 firemen, 1 engineer and 1 sectionman. The Bureau intervened in this strike but failed to arrange a settlement, the strike continuing until September 1; recognition of the union, which was refused by the company, being the cause which rendered settlement impossible. Among the other strikes in transportation, were those of sectionmen, freight handlers and shop men on different railroads in the State, and several strikes of longshoremen employed by steamship companies in New York City, in a number of which strikes the Bureau intervened with success. There were involved in these disputes in transportation 11,134 persons and the loss in working time resulting from the strikes amounted to 98,130 days.

The industry in which the greatest loss in working time occurred as a result of industrial disputes was the clothing and millinery trades and kindred industries. Seventeen disputes were reported to the Bureau in these trades, as compared with 15 reported in the year ending September 30, 1915. A strike of cloak, suit and skirt makers in New York City involving directly 57,000 workers and in addition 14,900 workers indirectly, occurred, resulting in a loss of 6,039,600 working days time but was settled by a compromise of the strikers' demands; and also in the same city a strike of 10,000 shirt makers, which began February 24 and ended April 14, which last strike resulted in the loss of 440,000 working days and which strike was lost.

In New York City, 1,500 tailors struck on March 1, which strike ended May 13 and resulted in the loss of 96,000 days time. A strike of makers of ladies' waists and dresses occurred in New York City on February 9, lasting 10 days and involving 19,000 workers and resulting in the loss of 190,000 days time. A strike in the same city, beginning January 31 and lasting 29 days, involved 7,000 people engaged in the making of children's dresses and resulted in the loss of 203,000 days time.

Workers in the boys' clothing industry went on strike November 30 and returned to work December 7. Fifteen thousand people in this strike lost 105,000 days time. A strike of kimona makers involving 2,500 operatives lasted 6 days and resulted in the loss of 15,000 working days. The last four strikes mentioned were successful, the strikers being given an increase in wages.

A strike of 445 garment workers occurred in Rochester lasting two and one-half days and resulting in the loss of 1,113 days time. This strike was partly successful resulting in increased wages in some instances. The full amount of time lost on account of disputes in this group of industries in this period was 7,124,336 days out of a total loss of 9,518,163 days working time resulting from all disputes reported. There were 129,162 persons involved in the disputes in these trades.

The greatest number of strikes reported occurred in the metal trades, the total being 85 as compared with 27 reported during the preceding year. On October 4, 1915, a strike of 12,000 employees of the General Electric Company at Schenectady occurred for an 8-hour day and an increase of wages to compensate for shorter hours. This strike lasted 28 days and caused a loss of time of 236,000 working days. On November 4, the strikers returned to work on conditions offered by the company before the strike started.

A strike of 10,550 machinists occurred in Buffalo, starting March 2, 1916, and continuing until April 29. This strike affected 74 shops in the city of Buffalo. The demands of the strikers were for an 8-hour day and increase of wages. Thirty-four shops granted the 8-hour day. The loss of time in this strike was 538,050 days.

On February 9, 1916, 2,800 jewelers employed in a number of different shops in New York City struck asking wage increase, recognition of union and a 44-hour week. This strike lasted about 60 days, resulting in the loss of 168,000 working days time, and was settled by a compromise of the strikers' demands. On March 4, 1,500 laborers employed by the Buffalo Copper and Brass Rolling Mill went on strike for an increase of wages, which strike lasted 3 days, with a loss of working time of 4,500 days, and resulted in the strikers receiving the increase asked for.

On April 14, 2,850 people engaged in the manufacture of cable wire, conduits and ammunition at Hastings went on strike for an increase of wages and shorter hours. This strike lasted 11 days, caused the loss of 22,165 days time and resulted in a compromise settlement.

One thousand two hundred fifty workers engaged in stamping and enameling works at Laurel Hill, Long Island, struck on May 5 for higher wages and shorter hours. This strike lasted 4 days and was settled by compromise, the strikers receiving a part of their demands. The loss of time in this strike was 5,000 days.

The total number of persons involved in strikes in the metal trades was 46,681 and the loss of time in this group of industries caused by disputes was 1,155,583 days.

In this period, 38 strikes occurred in the building industry in this State, the number of persons involved being 35,077 and the total working time lost amounting to 715,076 days. A strike of 11,000 painters, occurring in May in New York City and lasting 18 days, cost the strikers a loss of 198,000 working days and led to a compromise settlement by which the painters gained a part of their demands. In June, in New York City, a strike of 4,500 building laborers and 3,000 bricklayers occurred, lasting 17 days and resulting in a loss of 127,500 working days time. The strike was successful, the strikers getting an increase in wages.

In April, 1916, a strike seriously interfering with work in the construction of subways in New York City, involving 1,500 timbermen, 1,500 helpers, 2,700 laborers and 300 engineers, lasted

13 days, the demands of the men being for increased wages. Wages were increased as a result of this strike, the amount of time lost being 78,000 days. In Brooklyn a strike of 3,500 painters occurred in April, lasting 26 days and resulting in a loss of 94,500 days working time. This strike affected 320 shops and in 300 shops the strikers were granted an increase of wages.

In May, a strike of 3,000 carpenters occurred in New York City in which the strikers lost an average of 26 days each, the total loss of time being 78,000 days. This strike was for increased wages and was partly successful, the strikers winning a part of their demands.

Strikes in the building industry occurred in many localities in the State, notably in Rochester, Buffalo, Utica, Oneida, Niagara Falls, Jamestown, Tonawanda, Albany, Poughkeepsie and Elmira, increases in wages generally resulting from these disputes.

In the textiles group, 27 strikes were reported, involving 10,507 workers and resulting in a loss of 211,788 days working time. In New York City, 2,000 embroidery workers struck on February 5, demanding union recognition, wage increase and shorter hours of labor. This strike ended March 14 and resulted in the loss of 66,000 working days, the settlement being a compromise by which the workers received part of their demands. At Little Falls, 183 winders engaged in cotton spinning and knitting struck on May 1 for increased wages. This strike also involved indirectly 1,192 operatives in the same industry and lasted 30 days, costing the workers involved 41,250 days time. This strike failed.

In Cohoes, 451 operatives on knit goods in different mills struck for increase in wages, which strike also involved indirectly 800 workers in the same mills. This strike resulted in a compromise settlement, lasted 21 days and cost the employees involved 26,271 days time. A strike of 111 operatives in a carpet and rug making mill at Amsterdam, indirectly involving 2,044 other employees of the mill, began on May 10 and ended June 3. The strike was caused by a demand for increased wages and was successful. This strike caused a loss of 39,180 working days time.

In the stone, clay and glass industry, there were a total of 18 strikes reported to the office of the Bureau involving a total of 3,078 persons and resulting in a loss of 52,319 working days time. At Granville, 900 workmen employed in state quarries went on strike on April 11, the strike lasting 47 days and the demand of the men being for an increase of wages. This strike was successful, the wages of all the men on strike being increased. The loss of working time in this strike was 42,300 days. At Rochester a strike involving 227 glass workers began on April 5 and ended April 8. This strike was for a 9-hour day but failed.

Five strikes occurred during this period in the brick plants along the Hudson river — four of which were successful and one of which failed. Three strikes occurred in plants engaged in the manufacture and mining of gypsum and its products.

In the manufacture of leather and rubber goods, 17 strikes were reported to the bureau, involving 2,911 persons and resulting in the loss of 45,758 days working time. The most serious of the strikes in this industry occurred at Troy on March 23, when 400 brushmakers struck for recognition of their union. This strike ended May 27 and resulted in the loss of 22,800 days working time. The strike failed. Three hundred and seventy-five employees of a button manufacturing plant at Auburn struck on May 12th for a 50-hour week with the same wages as for a 54-hour week. After four days this strike ended successfully for the strikers.

Eight strikes were reported in the wood manufacturing industry, involving 1,778 persons and resulting in the loss of 23,465 working days time. Two strikes of employees of cooperage plants in Brooklyn, one involving 735 men and the other 500 men, occurred in May and June. One of these strikes was for an 8-hour day and the other for an increase of wages, the strikers losing their demands in both instances. The loss of time in both strikes amounted to 21,345 days.

In the food, liquors and tobacco industries, 14 strikes occurred involving 6,289 workers and resulting in the loss of 61,989 days of working time. The most serious of these was a strike of 4,300 employees of a sugar refinery at Brooklyn, which started January 29 and ended February 12. This strike was for an increase of wages and reduction of working hours. A compromise of both demands resulted from a conference of the parties to the strike arranged by the bureau. The loss of time in this strike was 51,680 days. A total of 4 strikes occurred in the sugar refineries of the State and 3 in the manufacture of cigars. Three strikes of employees of milk companies also occurred.

Five strikes which occurred in the paper and pulp industries involved 782 employees and resulted in the loss of 10,453 days working time. Three of these strikes failed and two resulted in compromise settlements.

In the chemical, oils and paints industries, 4 strikes occurred affecting 421 employees and causing the loss of 5,478 working days time. Three of these strikes were for an increase of wages. Two of these were successful and one failed. One of these strikes was for a half holiday on Saturday which was compromised.

Two strikes occurred in the printing and paper goods industry involving only 209 persons and resulting in the loss of 1,143 days working time.

In the water, light and power group, four strikes occurred involving a total of 691 employees and resulting in the loss of 8,487 days time, three of which failed and one of which resulted in a compromise settlement.

In the trades, five strikes occurred, which involved 251 persons and resulted in the loss of 11,921 working days.

In the hotels and restaurants, three strikes occurred — two of waiters and one of scrub women — involving a total of 3,060 employees and resulting in the loss of 50,120 days time. These last three strikes were successful.

Five strikes occurred in public employment during this period, 939 persons being involved and losing 5,087 days working time.

The period covered by this report was marked by great industrial unrest in this State. In this nine months period a greater number of labor disputes was reported to the office of this bureau than in any year since 1895. A greater number of employees were involved in disputes in 1913 than in this period, but the total of time lost through strikes and lockouts in this period ending June 30, 1916, was 9,581,163 days as compared with 7,741,247 days in 1913.

In the period covered by this report the number of successful strikes exceeded the unsuccessful, the numbers being 120 successful to 109 unsuccessful. In the years 1913, 1914 and 1915 the unsuccessful strikes exceeded those in which the strikers won their demands. The explanation of the number of successful strikes in this period is probably found in the fact that 270 strikes came from a demand for increased wages, there being a general disposition on the part of employers in this State to increase wages wherever possible during this time.

The tables attached hereto and made a part of this report will furnish figures for comparison with previous years.

FRANK BRET THORN,
Third Deputy Commissioner.

COMPARISON OF INTERVENTIONS, 1915–1916*

	1915	1916†
Number of disputes in which intervention occurred	49	96
Number of requests received for intervention	12	27
Number of disputes in which intervention was successful	27	52
Number of disputes in which intervention was unsuccessful	22	44
Number of interventions before strikes	4	2
Number of disputes in which conferences were arranged	33	58
Number of disputes settled by mediation with parties separately	....	2
Number of disputes settled by arbitration	3	2
Number of public investigations conducted	1	2

COMPARISON OF DISPUTES, 1913–1916†

		1913	1914	1915	1916†
Number of strikes and lockouts		268	123	104	328
Employees involved	directly	286,180	61,182	53,855	222,325
	indirectly	18,121	3,716	2,407	31,629
Aggregate days of working time lost‡		7,741,247	1,426,118	868,838	9,581,163

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* Particulars of interventions in 1916 are given in the table which is appended to this report.

† The figures in the above tables are for the period from October 1, 1915, to June 30, 1916.

‡ To end of all disputes.

TRADES AFFECTED

	Number of disputes		Number of working days lost	
	1915	1916*	1915	1916*
1. Stone, clay, glass products	2	18	100,800	52,319
2. Metals, machines, conveyances	27	85	154,143	1,155,583
3. Wood manufactures	3	8	2,223	23,465
4. Leather and rubber goods	4	17	50,694	45,758
5. Chemicals, oils, paints, etc	1	4	1,625	5,478
6. Paper and pulp	5	5	55,620	10,453
7. Printing and paper goods	......	2	....	1,143
8. Textiles	2	27	1,672	211,788
9. Clothing, millinery, etc	15	17	314,328	7,124,366
10. Food, liquors, tobacco	2	14	10,550	61,989
11. Water, light, power	......	4	....	8,487
12. Building industry	33	38	148,539	715,076
13. Transportation	8	76	28,644	98,130
14. Trade	......	5	....	11,921
15. Hotels, restaurants, etc	......	3	....	50,120
16. Public employment	......	5	....	5,087

PRINCIPAL CAUSE OR OBJECT OF DISPUTES

	Number of disputes		Number of working days lost	
	1915	1916*	1915	1916*1
Increase in wages	43	270	330,236	3,385,32
Reduction in wages	2	......	37,504	....
Shorter hours	12	13	96,587	68,142
Longer hours	......	......	....	....
Trade unionism	17	26	204,366	6,121,382
Particular persons	14	4	97,649	1,405
Working arrangements	4	5	48,690	2,721
Payment of wages	3	3	1,526	792
Sympathetic	1	1	168	200
Miscellaneous	6	6	52,112	1,200

RESULTS OF DISPUTES

	Number of disputes	
	1915	1916*
Strikes successful	41	120
Strikes partly successful	17	99
Strikes lost	44	109

METHOD OF SETTLEMENT OF STRIKES WON OR COMPROMISED

	Number of disputes	
	1915	1916*
Direct negotiations between parties	42	156
Mediation by state bureau	15	54
Mediation by other agencies	1	8
Arbitration	2	1

* The figures in the above tables are for the period from October 1, 1915, to June 30, 1916.

TABULAR SUMMARY

LOCALITY	Trade involved	Date of strike (actual or threatened)	Number of employees affected	Date of intervention
Albany	Hod carriers and laborers	April 1, 1916	600	April 12, 1916
Buffalo	Machinists	Threatened	10,000	Jan. 14, 1916
Buffalo	Electricians	Jan. 1, 1916	145	Jan. 14, 1916
Buffalo	Laborers	Jan. 18, 1916	400	Jan. 26 to Feb. 1, 1916
Buffalo	Laborers	Feb. 24, 1916	440	Feb. 26, 1916
Buffalo	Teamsters and laborers	Feb. 25, 1916	750	Feb. 28, 1916
Buffalo	Bridge building shop	Mar. 2, 1916	370	Mar. 4, 1916
Buffalo	Machinists and others	Mar. 2, 1916	5,000	April 1, 1916
Buffalo	Molders	Mar. 4, 1916	150	Mar. 7, 1916
Buffalo	Beaverboard workers	Mar. 7, 1916	100	Mar. 9, 1916
Buffalo	Bag makers	Mar. 8, 1916	172	Mar. 24, 1916
Buffalo	Laborers	Mar. 13, 1916	1,500	Mar. 14, 1916
Buffalo	Sheet metal workers	May 1, 1916	20	Aug. 26, 1916
Cohoes	Garnet workers	April 10, 1916	50	April 18, 1916
Cohoes	Garnet workers	May 1, 1916	1,500	May 19, 1916
Cohoes	Garnet workers	June 6, 1916	30	June 22, 1916
Dunkirk	Molders and helpers	April 17, 1916	125	April 22, 1916
Granville	Slate workers	April 11, 1916	50	April 20, 1916
Granville	Slate workers	April 11, 1916	120	April 21, 1916
Granville	Slate workers	April 11, 1916	45	April 22, 1916
Granville	Slate workers	April 11, 1916	86	April 24, 1916
Granville	Slate workers	April 11, 1916	150	April 25, 1916
Granville	Slate workers	April 11, 1916	110	April 26, 1916
Granville	Slate workers	April 11, 1916	200	April 27, 1916
Granville	Slate workers	April 11, 1916	33	April 28, 1916
Granville	Slate workers	April 11, 1916	15	April 29, 1916
Hastings-on-Hudson	Wire workers and laborers	April 14, 1916	2,820	April 15–26, 1916.
Little Falls	Leather workers	April 11, 1916	335	April 20, 1916
Manchester	Freight handlers	Feb. 19, 1916	120	Feb. 24, 1916
Maybrook	Railway clerks	June 11, 1916	75	June 14, 1916
Mechanicville	Freight handlers	Mar. 15, 1916	150	Mar. 18, 1916
Medina	Molders	Jan. 27, 1916	145	Jan. 29, 1916
Middletown	Railway shopmen	Mar. 9, 1916	500	Mar. 13, 1916
New York City	Suitcase and bag makers	Oct. 4, 1915	120	Oct. 14, 1915
New York — Brooklyn	Longshoremen	Oct. 11, 1915	750	Oct. 13, 1915
New York City	Longshoremen	Oct. 12, 1915	600	Oct. 13, 1915
New York City	Longshoremen	Oct. 12, 1915	300	Oct. 23, 1915
New York City	Machinists and others	Oct. 19, 1915	450	Oct. 21, 1915
New York City	Chandelier makers	Oct. 22, 1915	31	Oct. 27, 1915

OF INTERVENTIONS

Result of intervention	Result of strike
Arranged conference between committee from union and Builders' Exchange. Unable to reach a settlement.	Strike successful. Wages increased.
Efforts to arrange conference unsuccessful. Strike occurred March 2, 1916.	See account of strike below.
Efforts to arrange conference unsuccessful	Strike failed.
Efforts to arrange conference unsuccessful	Strike failed.
Employer agreed to meet committee of men if they called. (Intervention requested.)	Strike successful. Wages increased.
Conference arranged between representatives of the men and the Commissioner of Public Works, which resulted in a settlement.	Strike successful. Wages increased.
Conference arranged. Strike settled. (Intervention requested.)	Strike successful.
Efforts to arrange conference unsuccessful. (Intervention requested.)	Compromise.
Efforts to arrange conference unsuccessful. Company refusal to meet strikers. (Intervention requested.)	Strike failed.
Conference arranged. Settlement reached. (Intervention requested.)	Strike successful. Wages increased.
Efforts to arrange conference unsuccessful. Employer refused to meet strikers.	Strike failed.
Through mediation the employer conceded 50 cents a day increase. Accepted by strikers. (Intervention requested.)	Strike successful.
Efforts to arrange conference failed. Employers refused to meet strikers. (Intervention requested.)	Compromise.
Conference arranged. Strike settled. (Intervention requested.)	Strike successful.
Conference arranged. Strike settled	Strike successful.
Through mediation a settlement was reached. (Intervention requested.)	Strike successful.
Efforts to arrange conference unsuccessful. City Board of Trade settled strike later.	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted. (Intervention requested.)	Compromise.
Conference arranged. Settlement resulted	Compromise.
Conference arranged. Settlement reached. (Intervention requested.)	Compromise.
Efforts to arrange conference unsuccessful. Company refused to meet committee.	Strike failed. Strikers secured work elsewhere.
Conference arranged. No immediate results. Agreement reached later. (Intervention requested.)	Compromise.
Efforts to arrange conference unsuccessful. Company refused to meet committee from strikers.	Strike failed. Strikers' places filled.
Conference arranged. Settlement resulted	Strike successful.
Conference arranged. Resulted in agreement	Compromise.
Conference arranged. Settlement resulted	Strike successful.
Efforts to arrange conference unsuccessful	Strike lost. Men returned to work under old conditions.
Conference arranged. Strike settled	Strike successful.
Conference arranged. Strike settled	Strike successful.
Conference arranged. Strike settled. Men returned to work. 8 hour day not granted.	Strike failed.
Conference arranged which resulted in an agreement. No strikes should occur in the future. All disputes to to be arbitrated. (Intervention requested.)	Strike successful.

TABULAR SUMMARY OF

LOCALITY	Trade involved	Date of strike (actual or threatened)	Number of employees affected	Date of intervention
New York — Long Island City.	Copper smelters	Nov. 4, 1915	1,219	Nov. 15, 1915
New York — Long Island City.	Car cleaners	Nov. 5, 1915	260	Nov. 8, 1915
New York City	Car cleaners	Nov. 8, 1915	162	Nov. 8, 1915
New York — Brooklyn.	Carpenters	Dec. 23, 1915	39	Jan. 13, 1916
New York City	Salesmen and saleswomen	Jan. 18, 1916	400	Jan. 22, 1916
New York — Hollis	Laborers	Jan. 25, 1916	500	Jan. 26 to Feb. 1, 1916
New York City	Freight handlers	Jan. 27, 1916	94	Jan. 27, 1916
New York — Brooklyn.	Sugar refinery workers	Jan. 29, 1916	4,300	Feb. 1, 1916
New York City	Dressmakers	Jan. 31, 1916	7,000	Feb. 29, 1916
New York City	Milk wagon drivers	Feb. 1, 1916	22	Feb. 2, 1916
New York City	Jewelry workers (general)	Feb. 9, 1916	2,800	Feb. 9, 1916
New York — Long Island City.	Sugar refinery workers	Feb. 9, 1916	660	Feb. 12, 1916
New York — Brooklyn.	Longshoremen	Feb. 9, 1916	175	Feb. 15, 1916
New York — Brooklyn.	Ammunition workers	Feb. 11, 1916	525	Feb. 15, 1916
New York City	Machinists	Feb. 22, 1916	45	Feb. 28, 1916
New York City	Shirt makers (general)	Feb. 24, 1916	10,000	Feb. 24, 1916
New York City	Custom tailors (general)	Mar. 1, 1916	1,500	Mar. 6, 1916
New York — Brooklyn.	Mechanics	Mar. 6, 1916	338	Mar. 8, 1916
New York City	Cracker bakers	Mar. 21, 1916	250	Mar. 21, 1916
New York City	Diamond polishers	Mar. 22, 1916	130	May 19, 1916
New York — Long Island City.	Gas workers	Mar. 24, 1916	250	Mar. 31, 1916
New York City	Longshoremen	Mar. 26, 1916	350	Mar. 28, 1916
New York — Long Island City.	Silk weavers	April 14, 1916	37	May 3, 1916
New York — Long Island City.	Silk weavers	April 17, 1916	470	April 27, 1916
New York — Tompkinsville.	Freight handlers	April 21, 1916	300	April 28, 1916
New York — Woodhaven.	Agate and nickelware workers.	May 1, 1916	1,870	May 4, 1916
New York — Long Island City.	Meter workers	May 1, 1916	501	May 3, 1916
New York — Brooklyn.	Laborers	May 1, 1916	500	May 10, 1916
New York City	Iron workers (general)	May 1, 1916	1,500	May 29, 1916
New York — Brooklyn.	Metal workers	May 5, 1916	200	May 17 to June 14, 1916
New York — Long Island City.	Steel ware workers	May 5, 1916	1,250	May 6, 1916
New York City	Longshoremen	May 8, 1916	1,200	May 9, 1916
New York City	Longshoremen	May 16, 1916	310	May 18, 1916
New York City	Metal workers	June 12, 1916	150	June 20, 1916
New York City	Laborers and others	June 19, 1916	250	June 29, 1916
New York — Brooklyn.	Shoe workers	....	700	June 5, 1916
New York City	Doll makers	June 20, 1916	200	June 29, 1916
New York — Brooklyn.	Doll makers	June 20, 1916	200	July 6, 1916
New York City	Bus drivers and conductors	June 28, 1916	525	June 29, 1916
Newburgh	Mill workers	April 6, 1916	106	April 19, 1916

INTERVENTIONS — (*Continued*)

Result of intervention	Result of strike
Conference arranged. Strike settled. Wages increased.	Strike successful.
Efforts to arrange conference unsuccessful. Company refused to reemploy any of the strikers.	Strike lost.
Conference arranged. Company refused to grant any increase in wages. Strikers' places filled by others.	Strike failed.
Conference arranged. Settlement resulted	Strike successful.
Efforts to arrange conference unsuccessful. Merchants contended it would be recognition of the union if they met committee. Strike ended in all being reemployed.	Compromise.
Company's officials refused to meet committee of strikers. 200 returned to old conditions. 300 secured work elsewhere.	Strike lost.
Efforts to arrange conference unsuccessful. Company's officials refused to meet strikers.	Strike failed.
Conference arranged which resulted in a written agreement between the company and workers.	Compromise.
Several conferences were held between the manufacturers and union officials without results. Efforts to arrange further conferences failed. Later another conference held. Strike settled.	Strike successful.
Efforts to arrange conference unsuccessful. Strikers' places filled.	Strike lost.
Efforts to arrange conference unsuccessful. Strike ended. eight hour day to be in effect July 1, 1916.	Compromise.
Conference arranged. Signed agreement between company and workers.	Strike successful.
Conference arranged. Wages increased	Strike successful.
Conference arranged. Strike settled	Compromise.
Conference arranged. Wages increased	Compromise.
Efforts to arrange conference unsuccessful. Employers refused to meet union committee.	Strike lost.
Efforts to arrange conference unsuccessful. Employers refused to meet committee from union.	Strike lost.
Efforts to arrange conference unsuccessful. Strikers' places filled by others.	Strike lost.
Efforts to arrange conference unsuccessful. Strikers' places filled by others.	Strike lost.
Conference arranged. Men returned to work	Compromise.
Efforts to arrange conference unsuccessful. Strikers returned under old conditions.	Compromise.
Conference arranged. Wages increased	Strike successful.
Conference arranged. Method of weaving adjusted to increase earning.	Strike successful.
Conference arranged. Prices adjusted. Same pay earned for 50 hours' work as was formerly paid for 53 hours.	Compromise.
Conference arranged. Wages increased	Compromise.
Conference arranged. Trade agreement entered into. Strike settled.	Strike successful.
Efforts to arrange conference unsuccessful. Workers returned under same conditions as before strike.	Strike lost.
Efforts to arrange conference unsuccessful. Company hired others in strikers' places.	Strike lost.
Employers offered one dollar a week increase in wages. Refused. Efforts to arrange conference failed. Men returned on July 1, accepting the one dollar increase.	Strike failed.
Conference arranged. Wages increased. Union not recognised.	Compromise.
Conference arranged. Trade agreement entered into	Strike successful.
Conference arranged. Agreement reached. Strike settled.	Compromise.
Conference arranged. Wages increased	Compromise.
Conference arranged. Hours decreased	Compromise.
Conference arranged. Strike settled	Strike successful.
Arbitration by Bureau. Wages increased	Award satisfactory.
Conference arranged. Strike ended	Strike successful.
Conference arranged. Wages increased	Compromise.
Conference arranged. Wages increased	Compromise.
Effort to arrange conference unsuccessful. Employers refused to meet or treat with strikers.	Strike failed. Strikers secured work elsewhere.

TABULAR SUMMARY OF

LOCALITY	Trade involved	Date of strike (actual or threatened)	Number of employees affected	Date of intervention
Niagara Falls	Potmen and laborers	Jan. 10, 1916	1,200	Jan. 12, 1916
Niagara Falls	Potmen	April 4, 1916	500	April 5, 1916
North Tonawanda	Iron molders	Mar. 25, 1916	80	April 3, 1916
North Tonawanda	Glove makers	April 13, 1916	85	May 2, 1916
Poughkeepsie	Cigar makers	Jan. 5, 1916	167	Jan. 10, 1916
Poughkeepsie	Electrical workers	June 5, 1916	25	June 8, 1916
Rochester	Freight handlers	May 13, 1916	152	May 25, 1916
Rochester	Polishers, platers and others	May 24, 1916	72	May 26, 1916
Rochester	Shoe workers	June 8, 1916	134	June 22, 1916
Rochester	Shoe cutters	....	30	June 28, 1916
Schenectady	Molders, machinists, electrical workers and others.	Oct. 4, 1915	12,000	Oct. 6, 1915
Schenectady	Motormen and conductors	May 6, 1916	438	May 6, 1916
Syracuse	Machinists	Mar. 29, 1916	163	Mar. 27, 1916
Syracuse	Machinists (general)	April 14, 1916	1,250	April 17, 1916
Troy	Brush makers (general)	Mar. 23, 1916	300	April 1, 1916
Troy	Laborers	June 23, 1916	163	June 28, 1916
Utica	Hod carriers and laborers	June 1, 1916	150	June 29, 1916

INTERVENTIONS — (*Concluded*)

Result of intervention	Result of strike
Conference arranged. Settlement reached............	Compromise.
Efforts to arrange a conference unsuccessful. Strikers refused to meet company's officials.	Strike successful.
Conference arranged. Settlement reached............	Strike successful.
Efforts to arrange conference unsuccessful. Employer refused to meet committee. (Intervention requested.)	Strike failed.
Conference arranged. Strike settled.................	Compromise.
Efforts to arrange conference unsuccessful. Employers refused to meet strikers.	Strike failed.
Efforts to arrange conference failed. Superintendent agreed to reemploy those on strike. Strikers returned to work on that condition. (Intervention requested.)	Strike failed.
Efforts to arrange conference failed. Later a committee met employers and a compromise was reached. (Intervention requested.)	Compromise.
Conference arranged. Increase in wages granted. Business agent not recognized.	Compromise.
Effort to arrange conference unsuccessful. Employers stated places had been filled some months. (Intervention requested.)	Strike failed.
Conference arranged. Strike settled. Strikers accepted original offer made before strike.	Strike failed.
Conference arranged. Agreement reached to refer the dispute to arbitration.	Decision rendered made no material change in wages.
Efforts to arrange conference before and after strike unsuccessful. Employers refused to meet committee. Met general president later and effected settlement. (Intervention requested.)	Compromise.
Efforts to arrange conference before and after strike unsuccessful. Employers refused to meet committee. (Intervention requested.)	Strike failed.
Efforts to arrange conference unsuccessful. Manufacturers refused to meet committee from those on strike.	Strike lost.
Conference arranged. Strike settled..................	Compromise.
Efforts to arrange conference unsuccessful. The dispute was arbitrated later. Decision a compromise.	Compromise.

Part VI

REPORT OF BUREAU OF EMPLOYMENT

(1) REPORT OF DIRECTOR OF BUREAU OF EMPLOYMENT

To the Industrial Commission:

The beginning of the fiscal year having been changed from October 1 to July 1, the report which I have the honor to submit is for a period of nine months, from September 30, 1915, to June 30, 1916. The statistical tables submitted with this report, together with the separate reports from each office are also for the same period.

NEWSPAPER PUBLICITY

The bureau has now been organized for over a year and a half. In the smaller cities the local offices have become well known, but in the larger cities and in general the bureau is not yet as well known as it deserves to be. The newspaper press has been very liberal with the bureau and has given it considerable space. This is particularly true in the up-state cities. The press generally has come more and more to realize the importance of the offices in the economic field of their territory, and has increasingly given space to accounts of the activities of the offices and has made them a source of supply for special articles and stories, some directly connected with the offices' work, and others bearing on the human interest developed in the daily placement of men and women in all sorts of positions from the highest to the lowest. The bureau has a very special feeling of gratitude toward the press for its endeavor to make the general public understand the value of these offices as an economic factor and as centers of information regarding industrial activity. In spite of this, it is too frequently the case that we discover firms and expert workmen who have only the vaguest conception of the bureau's function and aims. A firm gives us an order for some minor position in its establishment, and when we promptly and successfully fill the order it often causes further investigation leading to the firm's becoming our enthusiastic supporter.

SPECIAL PUBLICITY DEPARTMENT

The need of a special publicity department in the bureau is constantly being emphasized. It should be the aim of this publicity department through the next few years to bring the bureau, its ideals and aims before the general public. While this has been and is frequently done by the director and the different superintendents, the other work required of them limits their activity in this direction. It is necessary to bring constantly to public attention the actual work of the bureau and what it can accomplish. This can be done only by a department especially devoted to that part of our work.

APPROPRIATIONS

If the Bureau of Employment is to fulfill even to a small degree the purpose for which it was established, a better understanding of its true place in the economic field will have to be more widely known. The Bureau at present is greatly handicapped by inadequate appropriations. We believe that this lack of proper financial support comes through an entirely erroneous conception of the purpose for which the Bureau was established. The general attitude held by those in a position properly to support it is that the Bureau is a " good thing," meaning by this that in some vague way it is an aid to those who are on the ragged edge of the industrial field. How great an economic factor a properly conducted employment office system is has not as yet been fully sensed. Education is necessary to dispel the idea that public employment offices are " primarily for the relief of unemployment in times of depression. The wastefulness and suffering of individual search for jobs, or resort to commercial agencies, seems never to have been visualized by those responsible for appropriating funds." In case this country should become involved in the European war, there will probably be an awakening on the part of the national and state legislatures to the position occupied by public employment offices in the industrial field.

One of the worst features of this misconception is the lack of recognition of the kind of people necessary to properly carry on the work of a public employment office. The work requires a high degree of tact, patience, and ability. A good placement clerk should have the academic training of a public school teacher, and in addition should have a wide knowledge of the industrial field, its opportunities, and requirements. A person of this kind is not willing to continue long on a low salary. The inadequate salaries paid by the Bureau has resulted in many resignations from the force. Those who accepted the low salaries offered at the time of the opening of the Bureau did so in the hope that there would be substantial advancements. These advancements were not granted in spite of the fact that good work was done. A considerable percentage of the force, believing that there was small financial future in the Bureau, resigned to take positions paying better salaries. They were able to get these better paying positions for two principal reasons: One was that the kind of work which they were capable of doing was better paid in the commercial field. The other was that they had received a training in the Bureau of Employment which made them valuable to private employers. In some instances men resigned to become employment managers of firms at double the salary paid them by the State Bureau of Employment. These resignations have been detrimental to the Bureau in several ways. For instance, the Bureau not only lost the value of the training which these agents had acquired through their work and their contact with more experienced workers, but it was also placed under the disadvantage of training a new set of workers, many of whom at the present time are being tempted to resign because of more advantageous offers from private organizations.

VISITING FACTORIES AND PLANTS

It was originally the intention to have the employees of the different offices visit the mills, factories, and other work places in their respective communities, at least two days, and more if possible, out of each week. This was for the purpose of bringing the office to the attention of the employer, and of increasing the Employment Bureau Workers' knowledge of industry and its labor requirements. This has been carried out to a considerable extent, but the limited staffs of our offices, together with the pressure of work as the offices become better known, have reduced the amount of visiting far below that originally planned. The experience gained through the increased amount of placement work and of registration has to a certain extent made up for this lack of opportunity to visit factories and work places. The employment office agents in recording the many thousands of orders for different kinds of workers, in questioning the thousands of applicants as to their work histories and experiences in different trades and occupations, have gained a wide knowledge of the many and varied industries in this State. It is hoped that the staffs may be increased so that this visiting (one of the most important phases of the work) can be carried on more fully.

NEED OF NEW OFFICES

It is more and more apparent that the Bureau of Employment of New York should increase the number of its offices in different parts of the State. The southern tier of counties is very strikingly in need of two or three offices located in the principal cities. There is a demand from nearly twenty different communities for such offices, and at this time there are no less than fourteen localities which should immediately have offices. In several of these cities there have been movements made by the chamber of commerce or some local body of like nature, looking to the offering of financial help, to the end that the State Industrial Commission might be induced to locate offices in their cities.

At the end of the European war, into which we are likely to become involved, there will be in this country great economic changes and great necessity for the shifting of workers from temporarily established industries into more permanent and normal work. If the State and nation are not prepared with a body of trained employment office agents to handle a situation of this kind, there will be much disorder, and great loss of time and money on the part of the workers in securing proper jobs and on the part of the employers in securing the proper kind of help. As about one-tenth of all the manufacturing in this country is carried on within the borders of New York, this State should take the lead in preparing for changes of this kind.

NATIONAL BUREAU OF EMPLOYMENT OFFICES

It is hardly necessary in this our second report to call any atention to the necessity for a State-wide, and indeed a nation-wide, system of public employment offices. The possibility of our becoming involved in the present European war very strongly emphasizes the need of a closely connected system, covering the entire country. A local city office may be very valuable to its own community, but until it is officially connected with a State-wide or nation-wide system, it loses half of its value. Undoubtedly each locality should help directly to support and should have to a certain extent a voice in the conduct of local offices, but the whole system should be centralized, and each office directly responsible to the central system.

Industrial preparedness is one of the leading elements in the proper preparation for the defense of a country. For this reason we believe that the Federal government, through a system of subvention, should encourage the different States to either start a public employment bureau or improve their present system, and should supervise and direct it, to the end that the present scattered work can be correlated and tied together by an efficient National Bureau of Employment Offices.

CHANGES IN THE LABOR MARKET

Great changes have taken place in the demand and supply of the labor market since our last report. Where formerly it was a matter of trying to find a position for a worker, it now seems probable that in a short while the tables will be completely turned, and it will be a question of finding sufficient workers for the jobs. To one who does not know the true functions of a public employment bureau, it might seem that in a time like this public employment offices would have little to do. The contrary is true. In spite of this change, our offices have practically continued, month after month, to increase the number of persons referred to work and the number of positions filled. This is attributable to several causes. The offices are more efficient in their work, are becoming better known and employers are turning to them more and more for help. Perhaps the leading cause is that in time of increased employment, there is always a great shifting of labor. Contracts are finished in one plant and workers laid off. If these workers have been placed by our offices or if they know of the offices, they visit them at once and are immediately placed in another shop or factory in which there is a demand. Our bureau at this time simply saves the workers many hours, and even days, of search for positions, and adds to the country's total many weeks and months of additional production. The fact that the change in employment conditions made little or no reduction in the number of private employment agencies in the cities of the State shows that the necessity of central points of information concerning the labor market is just as great under one condition as under another.

FARM LABOR

For the past few years there has been a gradual and steady decrease in the amount of farm help in this State. It has become more and more difficult for the farmer to obtain a sufficient amount of skilled help to enable him to cultivate his land. This lack of farm help is strikingly shown by a falling off in the agricultural production of the State. Men who formerly were willing to work on farms have discovered that they can secure a higher rate of wages in the industrial centers. Farmers, on the other hand, having been long used to paying a comparatively moderate wage, do not take kindly to the farm hands' demand for a considerable increase. Further, it is much easier to learn of and to get connected with a job in a large center than it is on an outlying farm. The necessity of an exchange for information between the available farm jobs and the farm hands, a large percentage of whom have resided in the population centers during the winter, is very strong.

A majority of the farms in this State are of a size which do not permit the farmer to retain his farm help the year round, and necessitates the rehiring of help every spring. There are over 40 counties in this State with sufficient agricultural population to justify the State Industrial Commission, through the Bureau of Employment, in establishing a small branch in each of the counties for the purpose of handling farm help. This could be done very efficiently through co-operation with Farm Bureaus which have been organized in most of these counties. The question of food production in this country has reached a point where this action is justified. For several years the State Department of Agriculture had, as part of its activities, a small bureau for farm employment. Realizing that this work should be carried on as part of the work of the regular Bureau of Employment, the State Department of Agriculture gave up this Bureau and turned it over to the State Bureau of Employment. This added several thousand farmer patrons to the lists carried by the offices of this bureau.

As an experiment in the line of establishing small branch offices for the handling of farm help, an office was opened in Auburn, which is the center of a large farming community and a point where there was an especially strong demand for this kind of office. The principal demand came from the Farm Bureau, which, like all the others in the State, was established for the purpose of carrying on educational work among the farmers. Experiments with different fertilizers and with different kinds of seeds are made, and in various ways the bureau endeavors to assist in agricultural development. The men who carry on the work of these farm bureaus are constantly solicited by farmers to secure them farm help. So great is this demand during the farming season that it handicaps the farm bureau manager in his regular work, and it was for this reason that the manager at Auburn solicited the State Bureau of Employment for help. This branch office has been a great success and has entirely justified itself. In connection with this part of the Bureau of Employment's work, I wish to call attention to the superintendent's report of the Auburn office, which is submitted along with other separate reports from the different offices. Attached to this Auburn report is a letter from the State Director of Farm Bureaus, commenting on it.

PRIVATE EMPLOYMENT AGENCIES

In our last annual report mention was made of the fact that certain information was being obtained from the private agencies in the State regarding the number of applications they had for work, the number of orders they had received from employers, and the number of placements made. This information was obtained through a monthly report blank, which was furnished to all these agencies. The obtaining of this information was kept up for a period of about one year. It was found that such information as was sent in was so scattering, vague and indefinite, and in many cases so incorrect, that it was of little use for statistical purposes, and therefore discontinued.

CO-OPERATION WITH OTHER ORGANIZATIONS

The usefulness of the offices of the Bureau has not only greatly increased directly in what may be called its legitimate field of bringing together the job and the worker, but the bureau has co-operated with many other agencies more or less connected with its line of work. For instance, in some of the cities in which offices are located, they have taken over the direction and placing of graduates and non-graduates from technical and business schools and these schools generally have co-operated with the offices. Further, an investigation was made of the private commercial schools in Greater New York. This was deemed necessary because of the large number of office workers turned out by these schools who were ill-fitted for the positions to which they aspired. A very thorough investigation was made of the cotton garment industry in the city of New York, looking to the establishment of special branch offices for handling the workers in this particular industry.

JUVENILE PLACEMENT DEPARTMENTS

Separate departments for juveniles have not been established in the different offices since our last report, owing to the lack of funds. Special appropriations should be provided for this purpose. The work with young people requires intensive treatment and should, as far as possible, be carried on apart from the work with grown men and women. In a department of this kind no attempt should be made to secure a large list of placements. An efficient juvenile department should take more credit for a child induced through advice to return to school than for a young person placed in a job.

A bill was introduced in the Legislature of 1916 for the purpose of making it mandatory that juvenile placement departments should be established in each office. Such objections as were made to this bill by those interested in child welfare showed that there was an entire misconception of the work proposed for these departments. In the first place, it was the bureau's conception that these departments should not necessarily enter the field of vocational guidance in so far as it related to the young people just coming out of school. It was conceived that the juvenile departments should keep in close touch with all vocational and trade schools, as well as with the grammar and high schools, so as to secure the advantage of the knowledge these schools could furnish concerning the young persons, to the end that they be secured the kind of positions best fitted to their training, ability and temperament. In other words, these juvenile departments in the public employment offices should be the placement offices to be used by all outside agencies dealing in any way with the education and direction of young people. These departments would be the better fitted for doing placement work because of their constant contact with industry and because they were connected with an office which was daily placing hundreds of adults in all sorts of positions. The information gained while doing adult placement work could be passed on to those engaged in placing young people.

There is a way in which the juvenile placement departments could be of value in giving vocational direction to a large class of young people with whom the schools are no longer in touch. A young person may come out of a school, either vocational or academic, and secure his job in any haphazard way. Often this job is but of short duration and he is again in the field in search of work. There are thousands of young men and women in just this condition. It is here that our juvenile placement department should be able to do its most valuable work. Young people in this predicament coming to us can get advice as to what the industrial field has to offer them. Their industrial horizon will be widened just in proportion as our offices gain in knowledge concerning the whole industrial field. We are in fact doing just this sort of guidance in our present offices with grown men and women. Many of these men and women have worked for years in positions with which they were dissatisfied, because unqualified, or because there was little or no advancement. When for some reason they were perforce compelled to leave them and had come to our offices, they found that among the many trades and occupations, there were positions in which they would be better satisfied, and in which advancement was more likely.

CONCLUSION

In closing this report, I wish again to emphasize the necessity of increased salaries in this bureau if it is to become a success. Further, I believe that the State Industrial Commission should insist on the gradual extension of offices throughout the State. Every time a new office is added to the bureau it not only aids the industrial field within the vicinity of the office, but helps to increase many fold the value of the bureau as a whole. The basic element of the bureau's success, however, will rest for a long time to come on the amount of proper publicity it obtains.

CHARLES B. BARNES,
Director, Bureau of Employment.

Table I —LABOR DEMAND AND LABOR SUPPLY ACCORDING TO NUMBER OF REGISTRATIONS AND NUMBER OF POSITIONS OFFERED FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

		LABOR DEMAND (Help wanted)		LABOR SUPPLY (Situations wanted)											
		Number of individual orders from employers	Number of persons applied for	Renewals of registrations	Total number of original registrations	Native born	FOREIGN BORN			Single	Married	Widowed	Referred	Number of positions reported filled
							Total	Citizens	Aliens					
*Brooklyn	Male	....	8,943	2,964	9,005	5,884	3,121	1,072	2,049	5,976	2,857	172	9,062	4,458
	Female	....	7,166	1,437	5,230	3,941	1,289	588	701	3,763	783	684	8,138	4,678
	Total	9,893	16,109	4,401	14,235	9,825	4,410	1,660	2,750	9,739	3,640	856	17,200	9,136
Syracuse	Male	....	4,125	475	3,911	3,129	782	249	533	2,467	1,318	126	4,008	3,222
	Female	....	3,435	550	1,458	1,274	184	70	114	875	347	236	3,410	2,260
	Total	5,848	7,560	1,025	5,369	4,403	966	319	647	3,342	1,665	362	7,418	5,482
**Rochester	Male	....	8,331	1,530	4,821	3,455	1,366	544	822	2,970	1,627	224	7,665	4,245
	Female	....	4,193	672	2,083	1,614	469	248	221	1,313	536	234	3,745	2,062
	Total	8,125	12,524	2,202	6,904	5,069	1,835	792	1,043	4,283	2,163	458	11,410	6,307
Buffalo	Male	....	5,472	1,258	4,352	2,819	1,533	604	929	2,863	1,384	105	5,505	3,676
	Female	....	3,390	1,008	1,775	1,332	443	258	185	1,073	399	303	3,215	2,097
	Total	6,362	8,862	2,266	6,127	4,151	1,976	862	1,114	3,936	1,783	408	8,720	5,773
Albany	Male	....	2,489	1,543	3,621	2,732	889	352	537	2,282	1,203	136	3,319	1,630
	Female	....	2,080	784	1,312	1,070	242	120	122	723	300	289	2,221	1,168
	Total	3,397	4,569	2,327	4,933	3,802	1,131	472	659	3,005	1,503	425	5,540	2,798
Grand total	Male	....	29,360	7,770	25,710	18,019	7,691	2,821	4,870	16,558	8,389	763	29,559	17,231
	Female	....	20,264	4,451	11,858	9,231	2,627	1,284	1,343	7,747	2,365	1,746	20,729	12,265
	Total	33,625	49,624	12,221	37,568	27,250	10,318	4,105	6,213	24,305	10,754	2,509	50,288	29,496

* Includes the sub-office of Williamsburg for the months of April, May and June, 1916.

** Includes the sub-office of Auburn for the months of March, April, May and June, 1916.

NOTES TO TABLES II, II-a, ETC.

For Tables II, II-a, II-b, II-c, II-d and II-e we have arranged twenty-six occupational groups under males and nine occupational groups under females. A large number of widely separated trades and occupations had to be brought under the heading " Occupations not otherwise classified " because there was such a small number in each. These occupational groups embrace the following trades and occupations:

Males

Agricultural Workers	Farm hands, fruit and berry pickers, gardeners, etc.
Bakers and Butchers	Bakers, butchers and helpers.
Blacksmiths, etc	Blacksmiths and helpers.
Boilermakers, etc	Boilermakers and helpers.
Bricklayers, etc	Bricklayers, masons, plasterers, helpers, concrete workers, marble and stone cutters, brick, tile and terra cotta workers.
Carpenters, etc	Carpenters, joiners, helpers, furniture workers, cabinet makers, finishers, machine wood workers, piano and organ workers, upholsterers and all other wood working trades.
Chauffeurs, etc	Chauffeurs, cab and coach drivers, deliverymen, draymen, teamsters, hostlers, stable hands, etc.
Clerical workers, etc	Bookkeepers, accountants, cashiers, stenographers, typists, office clerks, draftsmen, telephone and telegraph operators, mechanical, civil and efficiency engineers and other professions.
Coremakers, etc	Coremakers, molders and helpers.
Electrical Workers	Electrical workers, linemen and electricians.
Engineers, etc	Marine engineers and firemen, stationery engineers and firemen and oilers.
Factory Workers	Drug and chemical workers, paint, oil and soap makers, tailors, garment workers, hat and cap makers, laundry, cleaning and dyeing workers, millinery workers, shirt, collar and cuff makers, all other clothing, millinery and furnishings workers, cannery workers, cigar and tobacco workers, confectionery workers, all other food, beverage and tobacco workers, boot and shoe makers, fur workers, glove workers, harness makers, rubber workers, tannery workers, all other leather, rubber and allied products workers, paper goods workers, pulp and paper mill workers, all other paper and paper goods workers, spinners, winders, weavers and all other textile workers, and learners.
Hotel Workers, etc	Bartenders, cooks, chefs, countermen, kitchen workers, waiters, busboys, all other hotel, restaurant and institution workers, barbers, domestics, nurses and attendants and all other personal service workers.
Janitors, etc	Janitors, caretakers and watchmen.
Laborers	Building and construction laborers, chemical, oil and paint laborers, clay, glass and stone products laborers, clothing, millinery and furnishings laborers, food and tobacco laborers, leather, rubber and allied products laborers, metal and machinery laborers, paper and paper goods laborers, textile laborers, freight handlers, railroad section hands, transportation laborers, coal, lumber yard, etc., laborers, wood working laborers, day workers, dock workers, snow shovelers, ice cutters, all other casual workers and miscellaneous laborers.
Machinists	Machinists, tool and die makers and millwrights.
Machine hands	Auto repairers, garage workers, bench hands, assemblers, machine hands and helpers, and all other occupations in the machinery trades not otherwise classified.
Messengers, etc	Messengers, errand boys, etc.
Painters, etc	Painters, decorators, paper hangers, varnishers and helpers.
Plumbers, etc	Plumbers, gas and steam fitters and helpers.
Polishers, etc	Polishers, buffers, platers and helpers.
Porters	Saloon porters, store porters, miscellaneous porters and general cleaners.

Printers, etc	Bookbinders, machine operators, composing room employees, job printers, pressmen, feeders, proofreaders, and all other printing and publishing workers.
Salesmen	Agents, canvassers, collectors, bundlers, wrappers, clerks, salesmen, shipping and stock clerks, packers, window trimmers and all other wholesale and retail trade workers.
Tinsmiths, etc	Tinsmiths, roofers, sheet metal workers and helpers.
Occupations not otherwise classified	Structural iron workers, workers in the building and construction trades not otherwise classified, brewery workers, blast furnace workers, mining and quarry workers, railroad switchmen, flagmen, yardmen, street railway conductors and motormen, occupations in the transportation and public utilities trades not otherwise classified, elevator runners, moving picture employees, piano players, detectives, and miscellaneous workers not otherwise classified.

Females

Clerical workers, etc	Bookkeepers, accountants, cashiers, stenographers, typists, office clerks, telephone and telegraph operators, school teachers, graduate nurses, and all other professions.
Day workers	Day workers.
Domestics	Domestics, housekeepers, maids, etc.
Factory Workers	Drug and chemical workers, paint, oil and soap makers, clay, glass and stone products workers, dressmakers, seamstresses, tailoresses, garment workers, hat and cap makers, laundry, cleaning and dyeing workers, millinery workers, shirt, collar and cuff makers, all other occupations in the clothing, millinery and furnishing trades, cannery workers, cigar, cigarette and tobacco workers, confectionery workers, all other occupations in the food, beverage and tobacco trades, boot and shoe makers, fur workers, glove workers, rubber workers, and all other occupations in the leather, rubber and allied products trades, power machine operators, all occupations in the metal and machinery trades, paper goods workers, pulp and paper mill workers, all other occupations in the paper and paper goods trades, spinners, winders, weavers and all other workers in the textile trades, upholsterers and all other workers in the wood working and furniture trades, and learners.
Hotel Workers, etc	Chambermaids, cooks, kitchen workers, matrons, housekeepers, waitresses and all other hotel, restaurant and institution workers.
Nurses, Attendants, etc	Nurses and attendants, janitresses, laundresses, office and miscellaneous cleaners, companions and all other domestic and personal service workers not otherwise classified.
Printers, etc	Bookbinders, machine operators, job printers, composing room employees, proof readers, press feeders and all other occupations in the printing and publishing trades.
Saleswomen, etc	Agents, canvassers, collectors, bundlers, wrappers, cash girls, clerks, saleswomen, shipping and stock clerks, packers, models and all other occupations in the wholesale and retail trades.
Occupations Not Otherwise Classified	Farm help, bakers, piano players, elevator runners, manicurists, and miscellaneous workers not otherwise classified.

Table II — NUMBER OF REGISTRATIONS AND RENEWALS, POSITIONS OFFERED REFERRED AND REPORTED PLACED BY OCCUPATIONS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

OCCUPATIONS	REGISTRATIONS AND RENEWALS		POSITIONS OFFERED		REFERRED		REPORTED PLACED	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
			All Offices: Males					
Agricultural workers	3,846	11.49	4,055	13.81	3,731	12.62	2,679	15.55
Bakers and butchers	219	.65	132	.45	123	.42	58	.34
Blacksmiths, etc	185	.55	90	.31	86	.29	39	.23
Boilermakers, etc	67	.20	18	.06	18	.06	12	.07
Bricklayers, etc	262	.78	262	.89	220	.75	105	.61
Carpenters, etc	1,674	5.00	1,352	4.61	1,307	4.42	679	3.94
Chauffeurs, etc	1,756	5.25	1,066	3.63	1,181	4.00	514	2.98
Clerical workers, etc	3,433	10.25	1,137	3.87	1,404	4.75	531	3.08
Coremakers, etc	269	.80	145	.49	143	.48	56	.32
Electrical workers	466	1.39	133	.45	148	.50	60	.35
Engineers, etc	798	2.38	242	.82	289	.98	146	.85
Factory workers	2,147	6.41	1,016	3.46	907	3.07	370	2.15
Hotel workers, etc	1,919	5.73	2,216	7.55	2,246	7.60	1,125	6.53
Janitors, etc	981	2.93	811	2.76	875	2.96	537	3.12
Laborers	4,590	13.71	8,869	30.21	8,434	28.53	6,050	35.11
Machinists	1,150	3.44	900	3.07	1,086	3.67	549	3.19
Machine hands	3,417	10.21	2,000	6.81	2,229	7.54	1,003	5.82
Messengers, etc	392	1.17	655	2.23	559	1.89	272	1.58
Painters, etc	753	2.25	390	1.33	412	1.39	244	1.41
Plumbers, etc	521	1.56	85	.29	117	.40	58	.34
Polishers, etc	171	.51	100	.34	94	.32	56	.32
Porters	600	1.79	1,135	3.87	1,221	4.13	727	4.22
Printers, etc	424	1.27	324	1.10	285	.96	136	.79
Salesmen, etc	2,296	6.86	1,467	5.00	1,717	5.81	833	4.83
Tinsmiths, etc	362	1.08	224	.76	209	.71	97	.56
Occupations not otherwise classified	782	2.34	536	1.83	518	1.75	295	1.71
Totals	33,480	100	29,360	100	29,559	100	17,231	100
			All Offices: Females					
Clerical workers, etc	4,004	24.55	1,440	7.11	2,140	10.32	880	7.18
Day workers	1,667	10.22	4,731	23.35	4,778	23.05	4,454	36.32
Domestics	2,973	18.23	4,984	24.59	4,521	21.81	2,104	17.15
Factory workers	3,211	19.69	3,896	19.23	3,858	18.61	1,993	16.25
Hotel workers, etc	2,670	16.37	2,995	14.78	3,038	14.66	1,557	12.69
Nurses, attendants, etc	948	5.81	898	4.43	1,014	4.89	587	4.79
Printers, etc	133	.81	289	1.42	315	1.52	167	1.36
Saleswomen, etc	673	4.13	1,005	4.96	1,041	5.02	509	4.15
Occupations not otherwise classified	30	.19	26	.13	24	.12	14	.11
Totals	16,309	100	20,264	100	20,729	100	12,265	100

Table II-a — NUMBER OF REGISTRATIONS AND RENEWALS, POSITIONS OFFERED REFERRED AND REPORTED PLACED BY OCCUPATIONS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

Occupations	Registrations and renewals		Positions offered		Referred		Reported placed	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
	Brooklyn Office Males:*							
Agricultural workers	964	8.05	857	9.58	669	7.38	482	10.81
Bakers and butchers	50	.42	29	.32	24	.26	13	.29
Blacksmiths, etc	60	.50	35	.39	37	.41	19	.43
Boilermakers, etc	7	.06	1	.01	1	.01	1	.02
Bricklayers, etc	78	.65	85	.95	70	.77	21	.47
Carpenters, etc	520	4.34	381	4.26	357	3.94	188	4.22
Chauffeurs, etc	619	5.17	395	4.42	416	4.59	144	3.23
Clerical workers, etc	1,481	12.37	643	7.19	753	8.31	305	6.84
Coremakers, etc	61	.51	26	.29	34	.37	11	.25
Electrical workers	226	1.89	80	.90	76	.84	36	.81
Engineers, etc	260	2.17	98	1.10	114	1.26	57	1.28
Factory workers	780	6.52	365	4.08	299	3.30	119	2.67
Hotel workers, etc	439	3.67	763	8.53	742	8.19	344	7.72
Janitors, etc	284	2.37	220	2.46	228	2.52	114	2.56
Laborers	1,315	10.99	1,856	20.75	1,889	20.84	1,032	23.15
Machinists	561	4.69	365	4.08	450	4.97	242	5.43
Machine hands	1,313	10.97	803	8.98	836	9.22	366	8.21
Messengers, etc	280	2.34	364	4.07	292	3.22	130	2.91
Painters, etc	259	2.16	99	1.11	97	1.07	59	1.32
Plumbers, etc	246	2.06	33	.37	48	.53	22	.49
Polishers, etc	56	.47	23	.26	27	.30	10	.22
Porters	369	3.08	482	5.39	551	6.08	287	6.44
Printers, etc	221	1.85	146	1.63	132	1.46	67	1.50
Salesmen, etc	1,147	9.58	662	7.40	799	8.82	341	7.65
Tinsmths, etc	151	1.26	35	.39	25	.28	7	.16
Occupations not otherwise classified	222	1.86	97	1.09	96	1.06	41	.92
Totals	11,969	100	8,943	100	9,062	100	4,458	100
	Brooklyn Office Females*							
Clerical workers, etc	2,438	36.57	843	11.76	1,308	16.07	508	10.86
Day workers	412	6.18	1,793	25.02	1,771	21.76	1,771	37.86
Domestics	611	9.16	811	11.32	825	10.14	351	7.50
Factory workers	1,605	24.07	2,025	28.26	2,170	26.66	1,046	22 36
Hotel workers, etc	784	11.76	933	13.02	1,141	14.02	609	13.02
Nurses, attendants, etc	420	6.30	319	4.45	407	5.00	194	4.15
Printers, etc	67	1.01	111	1.55	148	1.82	57	1.22
Saleswomen, etc	322	4.83	322	4.49	361	4.44	138	2.95
Occupations not otherwise classified	8	.12	9	.13	7	.09	4	.08
Totals	6,667	100	7,166	100	8,138	100	4,678	100

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* Includes the sub-office of Williamsburg for the months of April, May and June, 1916.

Table II-b — NUMBER OF REGISTRATIONS AND RENEWALS, POSITIONS OFFERED, REFERRED AND REPORTED PLACED BY OCCUPATIONS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

OCCUPATIONS	REGISTRATIONS AND RENEWALS		POSITIONS OFFERED		REFERRED		REPORTED PLACED	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Syracuse Office; Males								
Agricultural workers	643	14.66	730	17.70	707	17.64	573	17.79
Bakers and butchers	43	.98	30	.73	27	.67	16	.50
Blacksmiths, etc	33	.75	11	.27	9	.22	7	.22
Boilermakers, etc	12	.27	5	.12	5	.12	5	.16
Bricklayers, etc	34	.78	37	.90	30	.75	23	.71
Carpenters, etc	256	5.84	210	5.09	199	4.97	148	4.59
Chauffeurs, etc	228	5.20	159	3.85	181	4.52	113	3.51
Clerical workers, etc	423	9.64	103	2.50	95	2.37	62	1.92
Coremakers, etc	33	.75	22	.53	22	.55	10	.31
Electrical workers	47	1.07	7	.17	8	.20	5	.16
Engineers, etc	115	2.62	27	.65	31	.77	22	.68
Factory workers	133	3.03	49	1.19	42	1.05	30	.93
Hotel workers, etc	258	5.88	271	6.57	263	6.56	210	6.52
Janitors, etc	124	2.83	107	2.59	124	3.09	78	2.42
Laborers	616	14.04	1,366	33.12	1,278	31.89	1,132	35.13
Machinists	150	3.42	145	3.52	148	3.69	137	4.25
Machine hands	503	11.47	190	4.61	195	4.87	157	4.87
Messengers, etc	37	.84	54	1.31	46	1.15	34	1.06
Painters, etc	116	2.65	73	1.77	79	1.97	53	1.65
Plumbers, etc	51	1.16	12	.29	16	.40	12	.37
Polishers, etc	40	.91	36	.87	31	.77	20	.62
Porters	41	.94	123	2.98	125	3.12	106	3.29
Printers, etc	21	.48	20	.48	17	.42	11	.34
Salesmen, etc	284	6.48	182	4.41	191	4.77	138	4.28
Tinsmiths, etc	29	.66	26	.63	24	.60	20	.62
Occupations not otherwise classified	116	2.65	130	3.15	115	2.87	100	3.10
Totals	4,386	100	4,125	100	4,008	100	3,222	100
Syracuse Office: Females								
Clerical workers, etc	368	18.33	212	6.17	276	8.09	155	6.86
Day workers	174	8.66	903	26.29	922	27.04	813	35.97
Domestics	574	28.58	850	24.74	872	25.57	435	19.25
Factory workers	354	17.63	534	15.55	475	13.93	315	13.94
Hotel workers, etc	390	19.42	581	16.91	548	16.07	334	14.78
Nurses, attendants, etc	58	2.89	116	3.38	104	3.05	68	3.01
Printers, etc	11	.55	77	2.24	57	1.67	46	2.03
Saleswomen, etc	63	3.14	158	4.60	152	4.46	90	3.98
Occupations not otherwise classified	16	.80	4	.12	4	.12	4	.18
Totals	2,008	100	3,435	100	3,410	100	2,260	100

Table II-c.— NUMBER OF REGISTRATIONS AND RENEWALS, POSITIONS OFFERED, REFERRED AND REPORTED PLACED BY OCCUPATIONS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

OCCUPATIONS	REGISTRATIONS AND RENEWALS		POSITIONS OFFERED		REFERRED		REPORTED PLACED	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
				Rochester Office: Males*				
Agricultural workers	1,242	19.56	1,652	19.83	1,479	19.30	1,078	25.40
Bakers and butchers	45	.71	39	.47	40	.52	15	.35
Blacksmiths, etc	32	.50	19	.23	18	.23	3	.07
Boilermakers, etc	3	.05	.....	.....	.....	.....	.....	......
Bricklayers, etc	50	.79	77	.92	60	.78	29	.68
Carpenters, etc	312	4.91	413	4.96	414	5.40	189	4.45
Chauffeurs, etc	232	3.65	242	2.90	275	3.59	102	2.40
Clerical workers, etc	469	7.39	204	2.45	267	3.48	82	1.93
Coremakers, etc	56	.88	58	.70	37	.48	18	.42
Electrical workers	48	.76	18	.22	20	.26	10	.24
Engineers, etc	98	1.54	34	.41	38	.50	16	.38
Factory workers	815	12.83	441	5.29	381	4.97	143	3.37
Hotel workers, etc	356	5.61	648	7.78	603	7.87	259	6.10
Janitors, etc	191	3.01	156	1.87	171	2.23	79	1.86
Laborers	721	11.35	2,228	26.74	1,804	23.54	1,275	30.04
Machinists	217	3.42	242	2.90	266	3.47	97	2.28
Machine hands	593	9.34	533	6.40	502	6.55	202	4.76
Messengers, etc	48	.76	176	2.11	155	2.02	74	1.74
Painters, etc	117	1.84	94	1.13	94	1.23	52	1.22
Plumbers, etc	46	.72	24	.29	30	.39	15	.35
Polishers, etc	28	.44	30	.36	21	.27	17	.40
Porters	52	.82	199	2.39	196	2.56	97	2.28
Printers, etc	98	1.54	130	1.56	111	1.45	49	1.15
Salesmen, etc	267	4.20	396	4.75	420	5.48	224	5.28
Tinsmiths, etc	93	1.46	100	1.20	96	1.25	39	.92
Occupations not otherwise classified	122	1.92	178	2.14	167	2.18	81	1.91
Totals	6,351	100	8,331	100.00	7,665	100.00	4,245	100.00
				Rochester Office: Females*				
Clerical workers, etc	479	17.39	231	5.51	308	8.23	133	6.45
Day workers	173	6.28	595	14.19	575	15.35	513	24.88
Domestics	701	25.44	1,304	31.10	1,084	28.95	522	25.32
Factory workers	882	32.01	1,011	24.11	870	23.23	437	21.19
Hotel workers, etc	275	9.98	524	12.50	400	10.68	169	8.20
Nurses, attendants, etc	93	3.38	50	1.19	60	1.60	31	1.50
Printers, etc	36	1.31	80	1.91	85	2.27	52	2.52
Saleswomen, etc	115	4.17	395	9.42	360	9.61	203	9.84
Occupations not otherwise classified	1	.04	3	.07	3	.08	2	.10
Totals	2,755	100	4,193	100	3,745	100	2,062	100

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* Includes the sub-office of Auburn for the months of March, April, May and June, 1916.

Table IX-d — NUMBER OF REGISTRATIONS AND RENEWALS, POSITIONS OFFERED REFERRED AND REPORTED PLACED BY OCCUPATIONS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

OCCUPATIONS	REGISTRATIONS AND RENEWALS		POSITIONS OFFERED		REFERRED		REPORTED PLACED	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
			Buffalo Office; Males					
Agricultural workers	343	6.11	349	6.38	340	6.18	238	6.47
Bakers and butchers	20	.36	21	.38	18	.33	11	.30
Blacksmiths, etc	37	.66	22	.40	20	.36	9	.25
Boilermakers, etc	15	.27	12	.22	12	.22	6	.16
Bricklayers, etc	30	.53	41	.75	30	.54	20	.54
Carpenters, etc	262	4.67	224	4.09	208	3.79	117	3.18
Chauffeurs, etc	294	5.24	177	3.23	190	3.45	99	2.69
Clerical workers, etc	646	11.52	143	2.61	177	3.21	60	1.63
Coremakers, etc	76	1.35	33	.60	40	.73	16	.44
Electrical workers	74	1.32	22	.42	22	.40	5	.14
Engineers, etc	188	3.35	59	1.08	67	1.22	35	.95
Factory workers	163	2.91	94	1.72	93	1.69	52	1.41
Hotel workers, etc	180	3.21	123	2.25	128	2.32	75	2.04
Janitors, etc	141	2.51	80	1.46	82	1.49	52	1.41
Laborers	1,519	27.08	2,868	52.41	2.809	51.03	2,169	59.00
Machinists	85	1.52	97	1.77	114	2.07	48	1.31
Machine hands	656	11.69	371	6.78	401	7.28	187	5.09
Messengers, etc	8	.14	31	.57	35	.63	19	.52
Painters, etc	146	2.60	83	1.52	82	1.49	51	1.39
Plumbers, etc	52	.93	10	.18	12	.22	5	.14
Polishers, etc	32	.57	11	.20	15	.27	9	.25
Porters	89	1.59	311	5.68	321	5.83	223	6.07
Printers, etc	30	.53	10	.18	5	.09	2	.05
Salesmen, etc	323	5.76	139	2.54	139	2.52	82	2.23
Tinsmiths, etc	58	1.03	59	1.08	56	1.02	31	.84
Occupations not otherwise classified	143	2.55	82	1.50	89	1.62	55	1.50
Totals	5,610	100	5,472	100	5,505	100	3,676	100
			Buffalo Office; Females					
Clerical workers, etc	449	16.13	121	3.57	189	5.88	66	3.15
Day workers	704	25.30	1,267	37.37	1,337	41.59	1,203	57.37
Domestics	638	22.92	1,126	33.21	776	24.14	390	18.60
Factory workers	182	6.54	134	3.95	147	4.57	61	2.91
Hotel workers, etc	571	20.52	482	14.22	469	14.59	204	9.73
Nurses, attendants, etc	146	5.25	181	5.34	190	5.91	126	6.01
Printers, etc	2	.07	5	.15	5	.15	2	.09
Saleswomen, etc	91	3.27	65	1.92	96	2.98	41	1.95
Occupations not otherwise classified	.....	.....	9	.27	6	.19	4	.19
Totals	2,783	100	3,390	100	3,215	100	2,097	100

Table II-e — NUMBER OF REGISTRATIONS AND RENEWALS, POSITIONS OFFERED REFERRED AND REPORTED PLACED BY OCCUPATIONS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

OCCUPATIONS	REGISTRATIONS AND RENEWALS		POSITIONS OFFERED		REFERRED		REPORTED PLACED	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Albany Office: Males								
Agricultural workers	654	12.66	467	18.76	536	16.15	308	18.90
Bakers and butchers	61	1.18	13	.52	14	.42	3	.18
Blacksmiths, etc	23	.45	3	.12	2	.06	1	.06
Boilermakers, etc	30	.58	.....	.....	.....	.....	.....	......
Bricklayers, etc	70	1.36	22	.88	30	.90	12	.74
Carpenters, etc	324	6.27	124	4.98	129	3.89	37	2.27
Chauffeurs, etc	383	7.42	93	3.74	119	3.59	56	3.44
Clerical workers, etc	414	8.02	44	1.77	112	3.37	22	1.35
Coremakers, etc	43	.83	6	.24	10	.30	1	.06
Electrical workers	71	1.37	6	.24	22	.66	4	.25
Engineers, etc	137	2.65	24	.97	39	1.18	16	.98
Factory workers	256	4.96	67	2.69	92	2.77	26	1.59
Hotel workers, etc	686	13.28	411	16.51	510	15.37	237	14.54
Janitors, etc	241	4.67	248	9.96	270	8.14	214	13.13
Laborers	419	8.11	551	22.14	654	19.71	442	27.12
Machinists	137	2.65	51	2.05	108	3.25	25	1.53
Machine hands	352	6.82	103	4.14	295	8.89	91	5.58
Messengers, etc	19	.37	30	1.21	31	.93	15	.92
Painters, etc	115	2.23	41	1.65	60	1.81	29	1.78
Plumbers, etc	126	2.44	6	.24	11	.33	4	.25
Polishers, etc	15	.29	.....	.....	.....	.....	.....	......
Porters	49	.95	20	.80	28	.84	14	.86
Printers, etc	54	1.05	18	.72	20	.60	7	.43
Salesmen, etc	275	5.32	88	3.54	168	5.06	48	2.94
Tinsmiths, etc	31	.60	4	.16	8	.24	.....	......
Occupations not otherwise classified	179	3.47	49	1.97	51	1.54	18	1.10
Totals	5,164	100	2,489	100	3,319	100	1,630	100
Albany Office: Females								
Clerical workers, etc	270	12.88	33	1.59	59	2.66	18	1.54
Day workers	204	9.74	173	8.32	173	7.79	154	13.18
Domestics	449	21.42	893	42.93	964	43.40	406	34.77
Factory workers	188	8.97	192	9.23	196	8.83	134	11.47
Hotel workers, etc	650	31.01	475	22.84	480	21.61	241	20.63
Nurses, attendants, etc	231	11.02	232	11.15	253	11.39	168	14.38
Printers, etc	17	.81	16	.77	20	.90	10	.86
Saleswomen, etc	82	3.91	65	3.12	72	3.24	37	3.17
Occupations not otherwise classified	5	.24	1	.05	4	.18	.....	......
Totals	2,096	100	2,080	100	2,221	100	1,168	100

Table III — REGISTRATIONS AND RENEWALS WITH PERCENTAGES BY OCCUPATIONAL GROUPS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

MALES

CITY	Number of males registered and renewed	PER CENT		
		Skilled work, factory work and clerical	General labor, day work, casual, messenger and porter	Agricultural
Brooklyn	11,969	75.54	16.41	8.05
Syracuse	4,386	69.52	15.82	14.66
Rochester	6,351	67.51	12.93	19.56
Buffalo	5,610	65.08	28.81	6.11
Albany	5,164	77.91	9.43	12.66
Total	33,480	71.84	16.67	11.49

FEMALES

CITY	Number of females registered and renewed	PER CENT			
		Clerical work and saleswomen	Domestics, day workers, nurses, etc.	Hotel, restaurant and institutional work	Factory and all other work
Brooklyn	6,667	41.40	21.64	11.76	25.20
Syracuse	2,008	21.47	40.13	19.42	18.98
Rochester	2,755	21.56	35.10	9.98	33.36
Buffalo	2,783	19.40	53.47	20.52	6.61
Albany	2,096	16.79	42.18	31.01	10.02
Total	16,309	28.68	34.26	16.37	20.69

Table IV — NUMBER OF POSITIONS OFFERED WITH PERCENTAGES BY OCCUPATIONAL GROUPS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

MALES

CITY	Number of male positions offered	PER CENT		
		Skilled work, factory work and clerical	General labor, day work, casual, messenger and porter	Agricultural
Brooklyn	8,943	60.21	30.21	9.58
Syracuse	4,125	44.89	37.41	17.70
Rochester	8,331	48.93	31.24	19.83
Buffalo	5,472	34.96	58.66	6.38
Albany	2,489	57.09	24.15	18.76
Total	29,360	49.88	36.31	13.81

FEMALES

CITY	Number of female positions offered	PER CENT			
		Clerical work and saleswomen	Domestics, day workers, nurses, etc.	Hotel, restaurant and institutional work	Factory and all other work
Brooklyn	7,166	16.25	40.79	13.02	29.94
Syracuse	3,435	10.77	54.41	16.91	17.91
Rochester	4,193	14.93	46.48	12.50	26.09
Buffalo	3,390	5.49	75.92	14.22	4.37
Albany	2,080	4.71	62.40	22.84	10.05
Total	20,264	12.07	52.37	14.78	20.78

Table V — REFERENCES TO POSITIONS WITH PERCENTAGES BY OCCUPATIONAL GROUPS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

MALES

CITY	References to positions — Males	PER CENT		
		Skilled work, factory work and clerical	General labor, day work, casual, messenger and porter	Agricultural
Brooklyn	9,062	62.48	30.14	7.88
Syracuse	4,008	46.20	36.16	17.64
Rochester	7,665	52.58	28.12	19.80
Buffalo	5,505	36.33	57.49	6.18
Albany	3,319	62.37	21.48	16.15
Total	29,559	49.13	38.25	12.62

FEMALES

CITY	References to positions — Females	PER CENT			
		Clerical work and saleswomen	Domestics, day workers, nurses, etc.	Hotel, restaurant and institutional work	Factory and all other work
Brooklyn	8,138	20.51	36.90	14.02	28.57
Syracuse	3,410	12.55	55.66	16.07	15.72
Rochester	3,745	17.84	45.90	10.68	25.58
Buffalo	3,215	8.86	71.64	14.59	4.91
Albany	2,221	5.90	62.58	21.61	9.91
Total	20,729	15.34	49.75	14.66	20.25

Table VI — NUMBER OF PLACEMENTS WITH PERCENTAGES BY OCCUPATIONAL GROUPS, FOR THE PERIOD OF NINE MONTHS, FROM OCTOBER 1, 1915, TO JUNE 30, 1916

MALES

CITY	Number of males reported placed	PER CENT		
		Skilled work, factory work and clerical	General labor, day work, casual, messenger and porter	Agricultural
Brooklyn	4,458	56.69	32.50	10.81
Syracuse	3,222	42.73	39.48	17.79
Rochester	4,245	40.53	34.07	25.40
Buffalo	3,676	27.94	65.59	6.47
Albany	1,630	52.20	28.90	18.90
Total	17,231	43.23	41.22	15.55

FEMALES

CITY	Number of females reported placed	PER CENT			
		Clerical work and saleswomen	Domestics, day workers, nurses, etc.	Hotel, restaurant and institutional work	Factory and all other work
Brooklyn	4,678	13.81	49.51	13.02	23.66
Syracuse	2,260	10.84	58.23	14.78	16.15
Rochester	2,062	16.29	51.70	8.20	23.81
Buffalo	2,097	5.10	81.98	9.73	3.19
Albany	1,168	4.71	62.33	20.63	12.33
Total	12,265	11.33	58.26	12.69	17.72

Table VII — COMPARISON OF PERSONS SEEKING WORK AND WORKERS CALLED FOR AT STATE PUBLIC EMPLOYMENT OFFICES: BY MONTHS

MONTH	WORKERS SEEKING EMPLOYMENT (REGISTRATIONS AND RENEWALS)			WORKERS CALLED FOR BY EMPLOYERS			EXCESS OF	
	Males	Females	Total	Males	Females	Total	Registrations	Workers requested
1915								
*May	4,891	1,748	6,639	1,342	1,122	2,464	4,175	....
June	5,708	2,094	7,802	1,860	1,329	3,189	4,613	....
July	4,929	1,987	6,916	1,811	1,197	3,008	3,908	....
August	4,628	1,787	6,415	2,016	1,297	3,313	3,102	....
September	4,690	1,869	6,559	3,160	1,628	4,788	1,771	....
October	3,842	1,964	5,806	3,050	1,858	4,908	898	....
November	3,505	1,903	5,408	2,242	1,746	3,988	1,420	....
December	3,453	1,621	5,074	2,243	1,759	4,002	1,072	....
1916								
January	3,696	2,075	5,771	2,156	2,081	4,237	1,534	....
February	3,272	1,881	5,153	2,369	1,867	4,236	917	....
†March	3,977	1,924	5,901	3,670	2,410	6,080	....	179
†April	3,550	1,475	5,025	4,236	2,598	6,834	....	1,809
†May	4,003	1,873	5,876	4,834	3,150	7,984	....	2,108
†June	4,182	1,593	5,775	4,560	2,795	7,355	....	1,580

* First month with all five offices operating throughout month.

† Includes sub-stations at Auburn and Williamsburg.

Table VIII — COMPARISON OF WORKERS CALLED FOR AND PLACES REPORTED FILLED AT STATE PUBLIC EMPLOYMENT OFFICES: BY INDUSTRIES AND CITIES

	INDUSTRIES						CITIES				
	Total	Agri-culture	Building	Manu-facturing and mercantile	Trade and trans-portation	Domestic and personal service	Brooklyn	Buffalo	Rochester	Syracuse	Albany
Workers requested:											
May, 1915	2,464	214	306	799	148	997	626	359	572	717	190
May, 1916	7,984	682	1,358	2,100	677	3,167	†2,585	1,215	*2,073	1,299	812
June, 1915	3,189	280	757	724	205	1,223	804	467	676	984	253
June, 1916	7,355	709	1,546	1,590	608	2,902	†2,140	1,869	*1,740	914	692
Places reported filled:											
May, 1915	1,373	148	202	384	68	571	404	248	254	389	78
May, 1916	4,479	416	733	1,031	323	1,976	†1,580	758	*806	931	404
June, 1915	1,864	192	451	386	130	705	486	346	329	532	171
June, 1916	4,326	396	950	763	309	1,908	†1,375	1,139	*820	619	373

* Includes sub-station at Auburn. † Includes sub-station at Williamsburg.

(2) REPORTS OF SUPERINTENDENTS OF BRANCH OFFICES

(A) BROOKLYN OFFICE

To the Director:

I respectfully submit herewith the report of the New York City (Brooklyn) office for the year, 1916. The statistics furnished by this office, which are contained in the annual report, cannot be made to show many of the most important functions of this office. The co-operation with the many private and public educational, charitable, correctional and social service departments and organizations, the establishment of close relations with responsive employers, and the individual human contact with applicants requiring special attention, call for fuller mention.

Employers by their repeated orders and by their words of commendation have set their seal of approval on our efforts and hundreds of applicants have written letters of grateful appreciation of the assistance given by the office in placing them to their best advantage. With the exception of the usual slack seasons in certain industries, there was little unemployment last year. Some employers complained of a scarcity of labor because they did not have a crowd of men around their factory doors all day. One employer said that toolmakers were scarce because none had called at his shop in two weeks and was surprised when told how many weeks it would take a toolmaker to visit all of the shops in the city once even if he knew all of them by name and location and had plenty of time and carfare.

This office will be most efficient when it becomes a real labor clearing exchange. Every person out of work should immediately register and every employer needing help should notify the office at once. Thus more men will get the jobs for which they are fitted, and employers will have fewer idle machines.

The discontinuance of the farm bureau of the State Department of Agriculture in the spring of this year (1916) made it necessary for this office to carry on agricultural placement work in a larger degree than formerly. In order to give special attention to Long Island farmers, a suboffice was established at Mineola in co-operation with the Nassau County Farm Bureau. Many experienced farmhands applying at the Brooklyn office claimed that they had no carfare to go to Mineola and as the farmers generally refused to advance transportation it was necessary to discontinue temporarily the Mineola suboffice. It is planned to reopen it in the spring of 1917 on account of the shortage of farm labor and the scarcity of the food supply. The placement of farmhands requires a great deal of correspondence with the farmer, the careful selection by the placement clerk of a farmhand to meet many miscellaneous requirements of an exacting employer, the trip to the railroad station, cashing of a check or money order, purchase of ticket, checking of baggage, and often the departure of the farmhand in the early morning or late evening in order to arrive at a suitable hour. These difficulties apply particularly to a large city like New York. In a smaller city, situated near an agricultural district, it is customary for the employer to motor or drive from his nearby farm to the office and take the farmhand with him. In order to supply the demand of farmers for help and to do the work efficiently it is essential that two clerks be assigned to agricultural placement work; one man to interview, weed out and select suitable applicants from the hundred boys and men who daily apply for farm work, and one man to take care of the correspondence and the shipment of farmhands at whatever hour may be necessary. I therefore strongly urge that provision be made in the budget for two clerks for this important work.

Building and construction furnished employment to a large number of carpenters, electricians, painters, sheet metal workers and their helpers. Many of these men secured work on new buildings and were placed by this office with employers who gave them fairly regular employment, but it is important to note that a number of middle-aged men — good mechanics but unable to do heavy lifting or to climb dizzy heights — were placed as permanent mechanics in factories which require a carpenter, an electrician, or a painter or someone as "factory maintenance man" to make general repairs. The scarcity of ships and the consequent overhauling of old vessels resulted in the placement by this office of a large number of ship carpenters and helpers.

The importance of a field solicitor has been shown by the results of a survey made of a part of the office building district in lower Manhattan. Particular attention was given to the insurance section and so many orders were received from casualty and fire insurance companies and so many excellent experienced clerks responded to our advertisements that it was necessary to make a special classification of these clerks and of the orders. The proof that a public bureau is the best means of connecting the man with the job is shown by the placement of experienced clerks (who had been canvassing the district in vain for months) with companies in the same office buildings in which, in some cases, they had lately worked. This office also placed many high grade clerks, who were holding temporary laboring jobs, in clerical positions at their former wages.

It is well to emphasize that the function of the Public Employment Bureau is not only to get a job for the unemployed man but even more "to put the round peg in the round hole." The married man who finds himself unable immediately to get a good job at his own occupation is compelled more often than most of us know to take work which is more laborious and less remunerative than his own calling. This is not only a loss to the individual but an economic waste to industry and therefore to the State. Hundreds of cases in every industry could be mentioned but the following instances emphasize sufficiently the point. A bookkeeper receiving $40 a week, an expert on foreign exchange, export and import trade and maritime matters, lost his position on account of war conditions. Unable to find any kind of clerical work because employers thought there was something wrong with a $40 man willing to take a $15 job, he worked as a longshoreman, a porter and as a munition shop laborer. Finally he was directed to this office and in a few days he was placed in a good position with a new firm at his old line of work. A mechanic of sixty years, weak in body but strong in intellect, and with a mental storehouse bursting with machine shop experience, lost his position. He called at our office and said that he was working as a dishwasher in a nearby restaurant. We placed him as a bench hand with a firm making small complicated machinery and tripled his wages. Dry, cold statistics cannot tell these human interest tales which make our daily work worth while.

It was difficult to supply the demand for male stenographers at from $12 to $15 a week. Beginners and men worth from $20 to $30 a week have not been so readily placed. Boys should be encouraged to master stenography if they desire to take secretarial or executive positions.

Hotel, restaurant, institutional and building maintenance help was scarce and demanded somewhat higher wages, shorter hours, better food, lodging and working conditions. The chain restaurants and lunchrooms have been unable to secure sufficient Polish, Greek, Hungarian or Italian workers. Many small lunchrooms which formerly hired intemperate and shiftless itinerant men now pay the higher wages and are able to secure more satisfactory workers. Each summer sees a scarcity of hotel workers in the city which is due to the opening of the country and seashore hotels. The shortage of young men as porters, elevator runners and switchboard operators could be cared for by the substitution of middle-aged men who are willing and competent to do the work.

Garage workers and automobile mechanics have been placed in considerable numbers by this office. It is gratifying to note that many of the orders came from the recommendations of one employer to another. The emergency service of the bureau is shown by the following incident. A garage owner who suddenly lost the services of his cleaner and polisher telephoned to the bureau as it was closing that he needed a man that evening. At our suggestion he called in his automobile, was given a list of addresses near his garage and inside of an hour he had hired a suitable worker and taken him to the job.

Skilled mechanics who generally lost a few days or sometimes a week in securing the right job now apply here for work as soon as, or sometimes before, they have quit a job. It has been our experience that the more intelligent and highly skilled a man is the more quickly he applies here, after he has lost his work. This office is often able to telephone to an employer and secure work for a mechanic when we have an applicant but no immediate order in hand. Hundreds of married machinists who flocked to Bridgeport, Bethlehem and other places within 100 miles later returned to Brooklyn when the machine shops here became busy. Many munition shops trained laborers on lathes and other machines. Very few of these men have intelligence or skill enough ever to become machinists and yet they are reluctant to do laboring work when the shell factories are slack. Molders and coremakers formerly were only working at irregular intervals but now they have steady work and there is a slight scarcity of workers. Good machinists receive high wages during the year and regular employment. Tool and die-makers were at a premium and in some cases their wages have almost doubled in the past year.

There are always more chauffeurs applying than we can place. The many schools that advertise that a man can become a chauffeur in 10 days for $10 are responsible for the idleness of hundreds of ignorant young men who are employed at best only during the pleasant weather because they will not take more laborious work. The woodworking and furniture industries were not able to secure sufficient help. Men claim that the work is dangerous, unhealthy and that wages are not as good as those in other skilled shop trades.

The Brooklyn office has been handicapped by a lack of placement clerks. The handling of skilled as well as unskilled workers demands tact, patience and sufficient knowledge and ability to satisfy both applicant and employer. Our office has been fortunate in securing a good staff but it is much too small. There is great need at the present time of not less than four trained placement clerks.

This office has enabled many employers to observe the Labor Law who otherwise might have violated it unknowingly. When the employer gives an order for help we ask him about the working hours, the kind of machine for which he wishes an operator and the nature of the work. No boy is registered or sent to a job unless he has "working papers;" no applicant is sent to operate dangerous machinery unless the law so permits. We no longer wonder at the number of factory accidents when we hear the tales of some of our less intelligent applicants who have been permitted by careless foremen to run machines. Our almost too exacting selection of the right man, mentally and physically, for the right job has saved the Bureau of Compensation many claims, employers much money, workmen much suffering and maiming, and above all, it has saved to the State the lives of many of its citizens. This office has established itself firmly with employers and with tens of thousands of capable workmen and in order to satisfy them in the years to come it needs most urgently a sufficient number of competent assistants.

RICHARD A. FLINN,
Superintendent.

(B) THE WOMEN'S DEPARTMENT OF THE BROOKLYN OFFICE

To the Director:

The second year of the establishment of the Brooklyn office of the State Public Employment Bureau saw a steady growth in the work of the women's department. While the actual figures of the number of applicants handled and the number placed does not show a large increase, yet the nature of the work of the department indicates that it is meeting a definite need of the city. The list of employers is growing longer and the employers are calling upon the office for a greater variety of help. Many rely upon the bureau for all classes of employees, whether they need forewomen or errand girls, scrub women or bookkeepers, cooks or demonstrators, waitresses or floor girls. Whenever they need a worker they call Main 8477. This is the value of concentration of labor supply, which is found only in public employment bureaus.

Because such office handles all classes of occupations serves doubtlessly also as an important attraction to applicants. It is a marked fact, that in the women's department a large proportion of the applicants have no occupation and do not know what kind of work they want. They know only that they want a position, paying not less than a certain minimum wage. The question "What sort of work do you want?" brings answers like, "I don't know" or "anything" or "some light work," and it is "up to" the placement clerk to use her imagination in combination with her knowledge of the applicant's previous experience to suggest the kind of work and position for her. It emphasizes the close relation between placement work and vocational direction, whether it be the girl just out of school, the college graduate, the widow who is seeking a position for the first time, or the girl or woman, who has to change her occupation, because of her health or some other reason. In fact, this is frequently the very reason why applicants come to the office, rather than answer advertisements, because they feel that the placement agents have a broader outlook. Few people probably realize the responsibility that thus falls upon the clerks in such offices, and the need of a staff of intelligent, sympathetic workers, with time to give each individual attention. In doing such work the office is meeting a very important social service need of the community, in preventing industrial maladjustments and decreasing the number of unemployables, by fitting them into the work that they can do.

Although the women's department has been handicapped by poor quarters, with no separate entrance for women applicants and an insufficient staff, the year's work has shown the possibilities of growth and co-operation with other movements. Experimental co-operation with and recognition by schools, other social organizations and educational institutions has shown the value of the work and the need and importance in the city of the public employment bureau. To test the value of co-operation with the schools, the office undertook to register all the pupils who were graduated from one school and who had declared their intention of going to work. The results showed the need of such work in every school, which ought to be done by a definite juvenile department. Along similar lines, the department has been co-operating with the trade extension workrooms and the extension workrooms for commercial workers, which are conducted by the board of education for the purpose of testing girls as to their fitness for special trades. The Brooklyn office sent a larger number of girls to be tested than any other agency in the city. As a member of the advisory boards of both these workrooms, the superintendent of the women's department is able to keep in close touch with the work. In order that applicants may be sent only to establishments where conditions have been investigated and found satisfactory, the department is co-operating with the Bureau of Information of the Federation of Non-Commercial Agencies of New York City, which undertakes to investigate all places of employment. The superintendent of the department is a member of the board of managers, and thus is enabled to establish close co-operation with the bureau of information and the other non-commercial employment agencies. This work of investigating places of employment is an important part of the work of any bureau handling juveniles. One girl of sixteen explained that she came to the office because "I am afraid to go into any which what place," thus implying her faith that such a bureau would not send her to "any which what place."

In connection with exchanging calls with other free agencies, a system of exchanging introduction cards has been worked out, so that an applicant in another office may be sent directly to a position with the proper introduction card, thus saving the time and money of the applicant, and making for more rapid connection with the employer.

The department has also been co-operating with other social organizations, undertaking to relieve them of placement work, and thus leaving them more free for their own work. The superintendent of the women's department has been able to secure some publicity for the work of the department, bringing results both in new applicants and calls from employers by speaking at the assemblies of several high schools, at a course on women's work at New York University, at the Training School of the National Board of the Young Women's Christian Association, at branch meetings of the Women's Municipal League, at the Hebrew Educational Alliance, and at the annual meeting of the Brooklyn Vocational Guidance Association.

The year's work gives evidence of the influence that such a bureau can have upon employment conditions. One large factory called upon the women's department to organize its employment department, asking for suggestions as to wages and hours of work. Another prospective employer came to consult with the superintendent even as to location of a new plant, source of labor supply, wages he ought to pay and hours. In other cases the office is able to exert a good influence by refusing to send applicants where conditions do not meet legal requirements. As soon as the establishment meets the requirements, the office will undertake to send applicants. In times where labor is scarce, this is an important consideration for an employer. In other cases, where employers are offering less than the market rate, a mere statement on the part of the bureau of what is the prevailing market rate, will bring up wages several dollars. This is often a service to the employer who cannot know what prices are. During the past year, this office in co-operation with other agencies dealing with day workers, was able to adjust wages in this occupation. Workers were demanding $2 a day, and employers were objecting to such a large increase from $1.50 a day, which had been the prevailing rate for many years. The offices compromised the matter at $1.75 a day, which seemed to satisfy all parties concerned.

The department is becoming recognized as a labor center, and the bureau introduction card is coming to mean something, both to employer and employee. Applicants tell us of positions of which they have heard, asking us to make the connection for them. Moreover, as applicants themselves go out to positions they sometimes become employers. A matron, placed in charge of an institution, secures all the help, from teachers to day workers from the office. A forewoman placed in a factory always calls upon the bureau for her girls, and a stenographer in a publishing house does not forget to telephone us when additional workers are needed. A woman who applied at the office as a cashier, opened a boarding-house, and secured her help through the office which had tried to secure her a position. It is through such co-operation with applicants, employers and other organizations that the bureau makes its best growth.

Perhaps the day may come when all employers will feel like the one who said, when he was undertaking a new business, "I want my business to be a success, and I thought the first step toward success was to make use of the State Public Employment Bureau."

LOUISE C. ODENCRANTZ,
Superintendent Women's Department.

(C) ALBANY OFFICE

To the Director:

Herewith is respectfully submitted the second report of the Albany office of the Bureau of Employment.

Since the last report the office has grown in all its lines of endeavor. Our employers have increased in numbers and importance. Large corporations like the New York Central Railroad

Company, the Delaware and Hudson Railroad Company, the Standard Oil Company, Texas Oil Company, Western Union Telegraph Company, Postal Telegraph Company, New York Telephone Company, General Electric Company, have frequently called on us for office clerks, skilled mechanics and unskilled help of all kinds, sometimes as a result of our canvass, and at other times because they had heard of our work through others. Many building and road contractors have become regular clients of the bureau. Some who called on us only in dire necessity and then for common labor, favored us later by requesting skilled mechanics of all kinds. All employers of summer resort help who patronized us last year called on us again. Every factory employing women in Albany and many in neighboring cities and villages have called for that class of help. Nearly every large store has been assisted in some way. The best families in the city have found us reliable and careful, and come to us instead of going to New York City for their high class domestic help.

We have gained the confidence of the employees also. The general standard of applicants has improved much. The number of skilled mechanics, professional and clerical workers has increased and the quality is of a higher grade. The better class of workmen have found the bureau a real business institution and does not hesitate to apply here for employment.

We have overcome the three common prejudices against the public employment office: That it is simply another form of charity or relief; that it handles the unskilled and unfortunate only; and that it is merely another political institution, indifferent and easy-going, perhaps not to be trusted any more than the private agency. Both employers and employees have placed faith and confidence in the judgment and efficiency of the bureau in taking care of their needs. Large employers have informed the office in advance of contemplated changes or increases in working force, and organized labor officials have sent their idle members to us.

The office is also popular as a meeting place. Formerly employers of domestics and farmhands alone called in person for help. Now, manufacturers, builders, contractors, hotel proprietors, office managers, etc., make frequent visits to inform the office as to their particular and specific needs, or to meet applicants.

The positions offered have become much higher and the class of working people referred and placed better. A few instances may be here noted. We have furnished farm foremen as high as $70 per month and privileges, and farm hands as high as $40 and $45 per month, with board and room. We have had calls for all kinds of building mechanics, and have been able to furnish such union help as bricklayers, carpenters, electricians, painters, plumbers, and structural iron workers. In the line of clerical help, we have had calls for bookkeepers, stenographers, and office clerks, ranging from $65 to $100 per month.

In the garment and textile industries, we have had calls for shirt and collar operators, both men and women, who were able to earn from $9 to $18 per week on special lines of work. In the line of food products we have filled calls for first-class bakers, confectioners, meat cutters, all paying union wages. We have filled positions paying as much as $100 per month for hotel cooks. In the line of metals and machinery, we have had calls and made placements of auto mechanics, paying as high as $25 per week, and machinists and toolmakers, ranging from 40 to 50 cents an hour. Millwrights, patternmakers, cabinetmakers, upholsterers, press feeders, steam shovel men, marine firemen and, in fact, nearly every class of skilled mechanics have been called for during the past year at the office and, in most instances, furnished satisfactorily.

Housewives have called on us for high-class servants, such as cooks at $35 to $40 per month, maids at $25 to $35 per month, and laundresses at $30 to $35 per month. In many instances we were able to furnish this very scarce kind of help.

In a few instances the office was the only place where certain help could be found. One case was that of structural iron workers wanted a few hundred miles from Albany, where the employer was unable to find men. A few days after the call was left at our office he was furnished with six first-class mechanics at union wages. A local firm was in need of a special mechanic who was familiar with the adjustment of sewing machines of a certain make, but was unable to find such on account of the scarcity of machinists. A day or two after the order was left at this office we put him in touch with three men in that line of work, and one was engaged. A certain large office desired a woman comptometer operator with experience, paying $45 per month at the start. They were unable to find any at the various schools that ordinarily supply that kind of help, nor could they locate anyone by advertising. This office was able to find several suitable operators. A prominent citizen of Albany desired the service of a first-class caterer for the evening of the day on which the order was given. The office telephone became busy at once and within a short time after the housewife appeared she was interviewing the right sort of a cook and her troubles were over. Many other instances of prompt and satisfactory service could be mentioned.

The condition of the labor market during June, 1916, was just the reverse of that of September, 1915. The demand for help exceeded the supply of labor in nearly every instance. This condition of greater demand first appeared about March and continued and was growing stronger at the end of June. Many instances could be cited to show that there was a great local scarcity of available help. The demand for common labor on building, road, excavating and railroad work began early in the spring, and soon overcame the supply. Wages were immediately forced up. Building trades labor, which paid on an average of 25 cents an hour in 1915, paid as high as 35 cents, with an average of about 30 cents an hour in 1916. Some local building contractors, in order to get help, started camps so that they would be able to use transient laborers who might apply for work. Many firms which at one time would only take foreign help, such as Italians and Poles, were glad to get any kind of labor. Road contractors who paid $1.75 and $1.90 the first year, during the summer of 1916 paid as high as $2.50 and, in a few instances, as much as $3 per day for nine hours work. Usually the contractors complain that the average American laborer is a poor workman. One employer, however, who always employed Italian help, stated that he found the American laborer better than the foreigner in that he was more intelligent, quicker to understand, more capable of adapting himself to new work, and so more valuable to him. One contractor came regularly to the office for about two weeks and engaged from five to ten men each time, taking almost anyone who was willing to work. The office, upon inquiring why he took along men apparently unfit, was informed that in a group there might be two or three real laborers, and in order to be sure of getting these laborers he would gladly take the others along just for company's sake.

From March to July the demand for women factory hands was the strongest. Some concerns voluntarily increased the wages of all their employees and advertised that fact in order to induce women to come to their shops. In another case an employer gave $1 to each employee who would bring in a new employee to his factory.

When the summer resort season opened in June, the shortage of domestics grew worse, while the city hotels and restaurants increased their rates in order to hold their help. Summer resort workers, who work around kitchens and were accustomed to get $25 per month and board, were asking $30 and $35 per month and getting it. Hotel proprietors were unable to hire help from a distance and were forced to come to the office to obtain help directly, and take them with them in order to be sure. It was not unusual for every man who applied at the office to be referred to work on the same day he called.

At times during the early summer season, we were unable to supply the demand for first-class carpenters, bricklayers, painters, etc., while the demand for farm hands in June exceeded the supply by, perhaps, ten calls to one man. Good farm hands who could be gotten at $25 in 1915 were scarce at $30 and $35 per month, and more in 1916. During June practically no farm hands were shipped, placements usually being made in the office, farmers coming in and remaining until they were able to get a farm hand. It was no unusual thing to have more farmers present than farm hands.

In order to show the supply and demand, we give below a table showing by months the number of registrations, number of calls for workers, the excess of workers over positions, and excess of positions over workers.

MONTH	Applicants for work (supply)	Calls for help (demand)	Excess of supply over demand	Excess of demand over supply
1915				
September	605	334	271	....
October	666	355	311	....
November	681	374	307	....
December	547	416	131	....
1916				
January	612	422	190	....
February	394	306	88	....
March	539	538	1	....
April	464	649	....	185
May	539	812	....	273
June	491	692	....	201

Much work done along the line of advice, suggestion, guidance and direction, to the advantage and good of applicants, does not appear on our daily reports. There is a great amount of information given out as to where to find boarding houses, office buildings, railroad stations, boat landings, farms for sale, civil service examinations, charity department, hospitals, streets, public officials, etc. Machinists, office clerks, textile workers, paper makers, female factory hands, miners and laborers are often informed as to shops or localities where their special qualifications might be needed. If possible, the office gets in telephone connection with the firm and learns if they need anyone in that particular line. In many instances we are successful in assisting the applicant. Often we can advise those who desire to leave the city about the condition of work in distant parts of our territory. In some instances where we gave advice we learned later that we had rendered material assistance. One case is that of a young man who had been in the National Guard Camp, and returned to the city in September without a job. At our suggestion, he visited certain retail stores in search of a clerkship. Two months after, we bought a pair of shoes in a store where he served as salesman. Another case was that of two strangers in town, stranded but willing to work. There was nothing in their particular line so they were directed to apply at a freight office. Two weeks after, the office learned that the men had secured work and had earned enough for their transportation home. Another instance is that of a young man who had had some experience at drafting. At the suggestion of the superintendent, he applied to a large corporation which had a drafting department. It was months later that we learned he had obtained a permanent position. No doubt many other instances like the above have happened but the office never heard the result.

No credit is given and much valuable time is often lost in all of the offices in attempting to fill an order, which, in the meantime, is filled from other sources. It is discouraging after sending out a half dozen post cards and telephoning to a half a dozen people, many of whom are interviewed, to learn, when sending the first applicant, that there is no longer any vacancy.

Interviews with applicants represent a large part of our work. Every new applicant and many old ones, are interviewed so as to obtain full information as to the special lines of work for which they are fitted. Many times applicants request an opportunity to tell their story, and if time permits they are accorded this privilege.

The adult labor supply (men and women) is well taken care of by the office. Nearly all of the foregoing relates to that branch of our work. The same cannot be said in regard to minors — boys and girls, apprentices and learners. That most important part of employment bureau activity has been sadly handicapped by the lack of a separate department for vocational placement. That large and unfortunate group of unskilled workers, such as handymen, porters, ne'er-do-wells, dishwashers, is made up of many who might have had a better calling if they had had a chance, when a boy, to learn a trade. Without guidance or suggestion, they accepted their first job with no idea as to what future it had. Many of the boys of to-day face the same danger. The same is largely true of girls. Perhaps five hundred children in Albany leave school annually for work before they finish the course of study. Employers are seeking for learners and apprentices while hundreds of boys and girls are leaving schools and entering decaying trades, " blind alley " jobs, or overcrowded industries. It is sincerely hoped that the Bureau will be able to cope more efficiently with this problem by the creation of a separate department for boys and girls.

Numerous complaints against private fee-paying agencies were made at our office by employers and employees. Undependable, inexperienced or undesirable help furnished, was the complaint of the employers. Misrepresentation, overcharges, temporary jobs were charged by employees. In most cases of employees, the facts were meagre, second-hand, concerned out-of-city and distant offices or the offense was of long standing. Greater and more direct jurisdiction over private agencies by the State seems necessary to stop these fraudulent practices.

Some protection also should be given to employers who furnish transportation that would insure them enough return in the way of work from the help engaged, for the expense incurred. "Free excursions" by alleged workers have come to our notice much too often. We endeavor to protect our employers in the case of a single individual, by sending only a man who is well clothed, has baggage and some money, or is known to us. Often we take baggage check and mail it to the employer. That usually insures the help reporting for work at his destination. It is, however, the employer who hires gangs of men who usually "loses out"—quite often reaching his destination with only a few of the men he engaged. This is often the case with help picked up at private agencies. A law which would make it a misdemeanor for a man to accept transportation, meals, etc., and then "jump the job" without working out the expense incurred (providing all conditions of the work were as represented) would do much to discourage this kind of deceit and fraud.

Before closing, we wish to acknowledge our obligation to the local newspapers for the publicity given our office. They have helped much to make the office well known and popular with the general public.

At the opening of this office, the main business was to find work for men. That is now changed about to finding help for employers. The office has been shown to be of great value under both conditions of the labor market and has become truly a clearing house for labor. How long the present condition of work for all will continue no one can predict. But this must be said, after the great war has ceased and peace has been declared, certain economic changes will come out of the readjustment of industrial forces, and the place of the employment bureau will be more important than ever. It will be then that a system of efficient, experienced offices, equipped with all the necessities as to office force and methods for handling employment problems, as has been begun in the State of New York, will be most urgently needed, and we feel sure will not be found wanting.

DANIEL A. HAUSMANN,
Superintendent.

(D) SYRACUSE OFFICE

To the Director:

The office of the State Employment Bureau in Syracuse from October 1, 1915, to July 1, 1916, was the means of distributing quickly and advantageously the available supply of workers. During this entire period the office faced a shortage in the number of applicants and a tremendous demand for labor in practically every line of work. It was a time of maximum employment, and almost any man or woman who had the desire and capability for work could secure employment when given the proper information and direction. The only line during this time in which the supply of applicants far exceeded the demand was the clerical line. The only exception in this line was stenographers, for which there was a fair demand. The majority of firms were able to sell to the maximum of their production without the necessity of soliciting the trade. This resulted in the laying off of many salesmen and high class clerical men, and there were probably more men of this class seeking positions than in any preceding year.

The wages offered workmen during this period in many instances were far in excess of anything that had been known before in years. Farmers were compelled to pay high prices for their help. The fall of 1916 will witness a scanty harvest in many sections of the State, due not only to the rainy season of the spring and the hot dry summer, but also to the fact that many farmers made no attempt to plant, as they could not obtain the help to prepare the ground or put in the seeds.

In April, 1916, the Syracuse office organized its advisory board, composed of representative employers and employees, the mayor of the city being chairman of this committee. Since that time the office has been given larger publicity and a better standing in the community, and has been better understood by both employers and employees.

The year 1916–1917 will, no doubt, witness a doubling of the number of placements by the office. This will not be due alone to increased efficiency, since the present force in the Syracuse office is an entirely new one with the exception of the superintendent, but will be largely due to the greater dignity, the wider publicity and the general broadening of the scope of the office.

The needs of the office are more office space, an additional entrance, a department for juveniles, and one worker who will give his entire time to the placing of teachers and high class clerical and professional workers, both men and women.

W. T. CLEMENS,
Superintendent.

(E) ROCHESTER OFFICE

To the Director:

With the exceptional wave of prosperity which swept across the country late last fall and continued up to the present time, the State Public Employment Bureau has assumed a peculiar function. In ordinary times or periods of depression, its chief work is to locate jobs for unemployed men. During the past year it has been trying to find men for unfilled jobs. Hence it has assumed a position of great importance to the employer.

Through a definitely organized advertising campaign, the Rochester office during the past nine months has succeeded in nearly doubling the demand for and the supply of workers applying at the office. Weekly letters to the newspapers containing a summary of the condition of the market and a list of jobs open have been a great factor in developing the work.

In spite of wide publicity, however, the average employer was ignorant of the real purpose of the office. Most of them considered it a clearing house for farmhands and domestics only. Consequently, representatives of the office began personal visits to the various stores and factories. In interviewing the hiring official, the representative of this office not only informed him of the scope of the bureau but also solicited orders for various classes of workers. As a result, most of the employers placed trial orders. That the office proved its value is shown by the fact that the majority of employers who placed trial orders have become regular customers, calling upon it in regard to every conceivable vacancy, from a highly skilled technical man or woman to a man for a day to take the place of a sick employee.

From the time of its establishment to July 1, 1916, the Rochester office has enrolled 5,000 employers as customers. During the period between October 1, 1915, and July 1, 1916, the Rochester office, including its Auburn branch, received 12,524 calls for workers; 9,106 have applied for positions. Men and women have been referred to 11,410 positions, and up to this date it has been learned that 6,307 had secured positions.

The work of the office is not confined to finding jobs for workers. Employers are now consulting it regarding various problems in connection with their organization. What class of foreigners would you use for this particular job? Would you advise us to put old or young men on this work? We have a large labor turnover; what is the reason that applicants give for not wanting to work in our plant?

In one case, an employer had difficulty in keeping girls on a certain job. Most of the applicants would not stay more than a week. After repeated requests for help, he finally invited a representative of this office to visit his shop. After a study of the work, it was found that he expected a girl to work for four and a half hours steadily at a certain mechanical job. The employer was advised that the work was too monotonous; that he should alternate the operation with something entirely different. This method was tried out with the result that he had no difficulty in holding girls.

During this period of prosperity, the value of a state system of employment offices has been evident. Although on account of the heavy local demand in most lines, it was deemed inadvisable to shift mechanics from one city to another, the local office has, through co-operation with the other office of the bureau, been able to secure several technically trained people, whose field of opportunity is not confined to a single locality. Likewise applicants who were specialists along certain lines have been placed in other sections. The office has also been in a position to secure for an applicant information regarding opportunities in other cities of the State, thus often saving him considerable money.

In the men's department, men skilled in practically any trade have been placed readily. Semi-skilled men have been more available and much harder to place. Laborers for construction work have received the highest rate ever paid with a large unsatisfied demand. Foreign labor has been practically an unknown quantity. Employers have been loath to accept Americans for construction work owing to the fact that the available class of natives who would do the work were considered undesirable.

This office, located in the heart of a prosperous farming country, has been a great aid to the farmer in obtaining help. While the present season has been a poor one, with a great reduction in size of crops, the farmer has had difficulty in obtaining good help. Even when he secured a man he was obliged to pay from $30 to $40 a month as compared with $25 and $30 in preceding years. Likewise fruit pickers and day hands would not consider positions which paid less than $2 a day and car fare.

From its establishment this office has had more difficulty in securing women than men. In order to overcome this condition special publicity articles have been issued. In addition the co-operation of the churches, the Y. W. C. A. and women's organizations has been successfully sought. The office has also received a number of high grade positions which attracted the better class of workers. A special department has been established for laundresses and cleaning women who apply between 8 and 9 A. M. only. This deparment has been especially praised by the housewives of the city for the assistance it has rendered them. The factory department has especially sought to assist young girls in locating in factories which offered them the opportunity to become skilled.

The facilities of the office for handling juveniles, particularly boys, have been very poor. It is unwise to require boys to mingle with men. Neither should they be handled in the same manner as a maturer person who has been trained for a certain type of work. The future of the child who applies to us is in our hands. We are in a position to guide him into an opportunity to become a successful man or vice versa. There should be a special department separted entirely from all others, to which the boy and girl could go to seek advice regarding employment. With the knowledge of the industries which we have obtained by visitation and the filling of orders; with the study of men that we have made, we are in a position to offer expert advice to the boy and girl. In many cases, we would be able to return the child to school, where additional education was needed. We have followed this procedure as far as possible, but with a special department, our facilities will be increased many times.

HARRY C. TAYLOR,
Superintendent.

(F) BUFFALO OFFICE

To the Director:

About October 1, 1915, the Buffalo office began to feel the change which was gradually taking place in industrial conditions, but it was not until the following March that a decided increase in the number of workers called for and a similar decrease in the available men and women to fill positions, was reflected in the monthly reports. Each succeeding month showed an increase over the preceding month, and the figures for June, 1916, practically doubled those of March, and tripled those of June, 1915. Building and construction, which usually slackens during the winter, showed a remarkable demand all through the cold season.

In the women's department, the service to housewives became more and more appreciated, the office being able to supply a large number of domestics and laundresses. In this department, too, the call for clerks, stenographers and saleswomen very largely increased.

June, 1916, was the first month of co-operation with the branch employment office of the United States Department of Labor located in Buffalo. An arrangement was entered into whereby the Federal agency was to handle the laborers and unskilled workers, while the State office was to give all its time to the skilled trades and professions, and in addition, was to maintain a women's department. This co-operative arrangement made it possible for the professional worker, the skilled mechanic, and all women and girls to apply for employment at a place equipped, maintained and conducted in such a manner that no matter how high the applicant's station in life, he found pleasant surroundings, expert advice, and a position, if possible.

While a public employment bureau is primarily maintained to find employment for those in need of it, and to supply employers with help, there are other functions which naturally go with a public employment office. For example, the Buffalo office has in many cases acted as mediator between an employee and an employer in a case of discharge. It has frequently taken up a dispute arising from a misunderstanding and settled it. Both employers and employees have called on the office to know about the labor laws. Several of the employees of the Buffalo office have made a round of the various factories and work places in the city, and have thus educated themselves so that they are in a position to advise men and women about the kind of work they should take up, showing them the benefits and disadvantages of various employments. The office has on occasion helped to discourage an employee from making a change when it could show the applicant that the change would be to his disadvantage.

These visits to the various industries have also brought to the office a large amount of information which will be valuable in case there is established a Juvenile Placement Department, which it is hoped will be created within the very near future. The Department of Education of the city of Buffalo is ready to cooperate with such a placement department and is very anxious that it should be established.

A very important part of the work of this office has been in the giving of reliable information to prospective manufacturers who were considering Buffalo as a location. Many firms of this kind were referred to us by the Chamber of Commerce, and we were able to give them information regarding labor conditions, wages, hours, the kind of employees living in the city, and the possibility of securing the kind and size of working force the firm would need. On the other hand, we have been able to give information to employees living out of the city who desired to move to Buffalo.

This office has been the meeting place for the Associated Employment Supervisors, an association composed of men engaged in employment work for some of the largest plants in the city. The superintendent of this office is a member of the Association, and at these meetings various matters connected with the hiring of workers were taken up and discussed. These discussions very often took into consideration the labor conditions in the entire western part of the State.

From all this it can be seen that the State Public Employment office of Buffalo is something more than a mere "job dispensary."

G. B. BERNER,
Superintendent.

(G) AUBURN OFFICE

To the Director:

The Auburn office was established as the result of an appeal from the Cayuga County Farm Bureau for aid in handling farm labor. As an inducement the Farm Bureau offered to share its office and to furnish telephone and stenographic service. Auburn has a population of 36,000 and its factories alone employ 7,000 people. It is also the center of a large agricultural district. The Bureau of Employment, considering this a field which justified the establishment of a branch office, accepted the offer and agreed to furnish the necessary workers. Consequently, on March 2, 1916, a branch of the Rochester office was opened at 30 North street:

The office in the first four months, the period covered by this report, dealt almost exclusively with agricultural workers. Beginning July 1st its scope was enlarged to include all workers in all lines. During March, April, May and June orders for 420 agricultural workers were received. Only 41 per cent. of these could be satisfactorily filled, although in all 423 people registered for work. It is certain that many times the number of workers called for at the office were needed in the county during these months. We are convinced that 500 more workers could have been placed at good wages if they had been available.

This lack of farm labor has cut down production in Cayuga county seriously. Literally hundreds of farmers have expressed themselves to us in these words: "I am doing what I can myself and letting the rest go." Many cases have come to our attention where fewer acres of corn, of beans, or of potatoes were put in because help could not be obtained for planting or depended on for harvest.

Thus the Bureau of Employment finds itself dealing with a commodity which presents a problem vital to the agricultural production of the State. The Auburn branch, through its association with the Farm Bureau, and through its routine work, has come into very close contact with the question.

For the period covered by this report, forces growing directly or indirectly out of the war have dwarfed all others and therefore require brief statement. An unparalleled industrial activity in supplying orders from abroad for munitions, motor trucks, clothing, etc., in manufacturing at home goods ordinarily imported, and in filling all the subsidiary orders for machinery, office or factory equipment, transportation facilities, etc., has created a great shortage of labor. The resulting rise in wages for fewer hours per day on work which often can be entered with little or no training has attracted hundreds of farmhands. The cutting off of 75 per cent. of all immigration, together with the return to the old country of thousands of reservists has further reduced the number of farm workers. Canada made an organized effort to replace her farmers who have gone to the front by importing farmhands from the United States. Higher wages, together with transportation in many cases, made the offer very attractive. It is certain that great numbers of experienced farmhands were taken from New York State alone.

We all recognize that the problem is much deeper than the temporary effects of a war. It seems to be the common belief that the kind of treatment accorded the farmhand, the hours or conditions of work, and the fact that there is "nothing doing" on the farm are at the bottom of it. Data gathered in our office from many seeking work in the city does not support this, however. In almost every case it is a matter either of wages or of continuous employment. The farmhand becomes convinced that he can make more in the factory or is dissatisfied with being obliged to seek a new place under unfavorable conditions at the end of each season. In this connection it is very noticeable that the farmer who keeps his man the year around never has trouble in getting help. When labor is scarce the farmer who hires a man only for the season has the difficulty. Another point is that wages are highest on those places which use men in the winter as well as summer.

In accordance with our general policy of encouraging the regularization of labor, we have spoken to a great many farmers about it. The answer is almost always the same. They cannot afford to pay higher wages or keep a man in the winter because they cannot raise enough — *on so many acres!* We have noticed that farms of less than 100 acres rarely keep a "hired man" in the winter; farms of more than 150 acres almost always do. On the larger farm there is an opportunity for a diversity of product, selected and managed with an eye to continuous use of labor, which the small farm does not afford. The efficiency which this makes possible enables the larger farm to compete with wages in the city.

There are countless minor considerations which affect the problem in individual cases, but if the economic principle is sound, matters of treatment of help, hours of work, entertainment, etc., will take care of themselves. *Continuous employment and wages equal to those received in the city are the essentials of a permanent labor supply on the farm.* Under present methods of agriculture in New York, the farm unit of less than a certain size, say 125 acres, cannot provide these essentials. That being so, no mere preaching "regularization" will help; the disastrous effect of the small farm's need of seasonal labor upon the labor supply and its inability to pay competitive wages must be so generally understood that the mere possession of the knowledge will in time solve the problem. If the Employment Bureau is in a position convincingly to point out this general condition it will have contributed something worth while.

LESLIE E. WOODCOCK,
Assistant Superintendent.

Co-operative Extension Work
in
AGRICULTURE AND HOME ECONOMICS
STATE OF NEW YORK
Office of the Director of Farm Bureaus

County Farm Bureau Association
N. Y. State College of Agriculture
N. Y. State Department of Agriculture
U. S. Department of Agriculture
Co-operating

ITHACA, N. Y., *July* 9, 1916

MR. CHARLES B. BARNES, *Director, Bureau of Employment*, 230 *Fifth Avenue, New York City.*

Dear Mr. Barnes:

I am in receipt of a copy of the report of the Auburn branch of the State Bureau of Employment, and want to say that I am thoroughly in accord with the general statements and suggestions made in this report.

The labor situation is forcing our farmers into two groups: (1) the one-man farm or the family farm, i. e., a business no larger than the owner and his family can take care of without any outside help. This is not the most efficient means of production from the acre standpoint or from the point of view of the general public. (2) The other group is a large farm with business enough to guarantee employment the year around and to warrant the employment of one or more laborers acting under the supervision of the owner. I think this is the most efficient type of farming, but inability to get satisfactory laborers is a limiting factor there as elsewhere.

I would welcome any steps that would help in the solving of this problem. I confess I do not know just what can be done other than what we are doing. I feel, however, that the establishment of more branch labor bureaus in connection with our farm bureaus, where it can be worked out as satisfactorily as it has been at Auburn, would be a step in the right direction.

Very truly yours,

M. C. BURRITT,

State Leader of County Agricultural Agents.

Part VII

REPORT OF BUREAU OF INDUSTRIES AND IMMIGRATION

REPORT OF CHIEF INVESTIGATOR

(In Charge of the Bureau of Industries and Immigration)

To the Industrial Commission:

I have the honor to submit herewith the report of the Bureau of Industries and Immigration for the fiscal year ended June 30, 1916, being the nine months from October 1, 1915, to June 30, 1916, inclusive.

During this period the reduction in the field staff would necessarily have reduced the number of inspections and investigations had not a reduction in the number of complaints received, as a result of the exodus of alien reservists, tended to equalize the distribution of field work. The change in date of the fiscal year moreover reduces the period covered by this report to nine calendar months, thus eliminating from consideration at this time the inspection of labor camps, which occurred during July, August and September of this year.

The fact that the great majority of persons entering complaints with the bureau are Italians, and that the number of reservists who have departed within the last two years is in excess of 140,800, together with the fact that large numbers of alien workmen have left New York and obtained employment in munition factories throughout the country, may very well account for a reduction of about 25 per cent in the number of complaints received.

The bulk of these complaints continue to be wage claims that, owing to the ignorance of the immigrant as to procedure, would certainly never have been recovered were it not for the amicable adjustments arranged by the Bureau which undoubtedly in many instances prevented these unfortunate people from becoming public charges.

Next in volume are complaints concerning exploitation by employment agencies which are inadequately regulated outside of the city of New York; and thirdly the exploitation by private banks and so-called insurance and benevolent societies, as well as money transmission agents of the large express companies who are authorized to sell foreign postal remittances and checks. It has been admitted that these companies are unable, in times like the present, to ascertain the amounts of money accepted by their agents, and consequently the amount of possible fraud under this absurdly ill-regulated system is incalculable and furnishes an additional problem in relation to the exploitation of the immigrant in New York that becomes increasingly important as his vital relationship to the social, financial and industrial life of the State is apparent. Few industries are now operated without their quota of alien employees and this factor becomes an important consideration in any discussion of industry, of industrial efficiency, safety or economy.

It is probably true that the vast majority of applicants for workmen's compensation are aliens *who do not understand English.* Safety devices lose much of their effectiveness *if the workman dos not understand directions,* and since the burden of responsibility for compensation rests wholly upon the employer, it must be apparent that compulsory instruction in English would be an economic asset to that employer. It has been demonstrated that an alien can be made literate to the extent of both reading, writing and understanding verbal instructions *in English* during a period of 60 hours' instruction. It would appear, therefore, that the employers of the State might very well consider this important phase of the "safety first" movement, and at a sacrifice of 60 hours of a workman's time *gain many hundred times the value of that time in his increased efficiency and the amount of compensation saved.* In some industries it is true that directions are printed and distributed in various languages. This may be effectual to the *literate alien* but it is believed that statistics will prove that the number of illiterate aliens applying for compensation greatly outnumber those who can read and write *in any language.*

Various estimates have been formulated as to what will take place relative to immigration after the termination of the war and when ocean transportation is re-established, but as yet these opinions are conjecture pure and simple. It may be authoritatively stated, however, that upwards of 1,200,000 outgoing steerage tickets *have actually been sold* to aliens in this country who will either emigrate in search of relatives in the belligerent countries, or send prepaid transportation to these people who will embark with large numbers of immigrant relatives and friends when peace is finally established. A fact that appears to be practically assured, however, is that there are at present millions of European women who are skilled laborers, and who, after the cessation of hostilities, will not be permitted by their governments to usurp the occupations of able-bodied men returning from the front; therefore it is safe to assume that these women whose economic independence has been established as never before in European history, will not be content to return to the domestic and farm drudgery from which they have been emancipated. Many of them will have no homes or home ties remaining to hold them, *all* will have the necessary money, health and assurance of a livelihood to admit them at our ports and then this country may have to face an industrial situation the ultimate end of which cannot be foreseen. Moreover, the bulk of this immigration may again swing the pendulum to the northern and English speaking races.

The exodus of Italian reservists has caused a shortage of labor that railroads and contractors have tried in vain to fill with consignments of southern negroes and Mexicans. Contract labor agents have reaped a harvest and thousands of positions in all the large industries are still vacant. Of the 140,800 alien reservists who have left the country 110,000 were Italians, 20 per cent of whom were residents of the State of New York.

DEFECTIVE ALIENS

Additional care and improvement in examination for admission of defective aliens by the Federal authorities has been possible during this period of reduced immigration, and it is to be hoped that the importance of continued vigilance may be recognized since the immigration of the future will undoubtedly be replete with those whose mental and physical health has been shattered during the cataclysm now convulsing so large a portion of the so-called civilized world.

It is urgently recommended that the State of New York shall take such steps as may be necessary to obtain from Congress the reappropriation of the head tax to be used as a maintenance fund *for which purpose it was originally intended.* Sufficient funds cannot otherwise become available to prevent an additional burden of taxation for the maintenance of this class of immigrants which will sift in after the close of the war.

Moreover, under either the existing act or the proposed Burnett bill admission is refused to:

> All idiots, imbeciles, feeble-minded persons, epileptics, insane persons, and persons who have been insane within five years previous; persons who have had two or more attacks of insanity at any time previously; paupers; persons likely to become a public charge; professional beggars; persons afflicted with tuberculosis or with a loathsome or dangerous contagious disease; persons not comprehended within any of the foregoing excluded classes who are found to be and are certified by the examining surgeon as being mentally or physically defective, such mental or physical defect being of a nature which may affect the ability of such alien to earn a living; persons who have been convicted or admit having committed a felony or other crime or misdemeanor involving moral turpitude * * *.

It must, therefore, be apparent that many persons who would perhaps be predisposed to insanity as a result of nervous disorders resulting from experiences attributable to the exigencies of the war, will subsequently develop insanity in the inevitable reaction that many of them will suffer even though no previous history may be established to bar their admission.

Under the commerce clause of the Constitution, Congress alone has the power to admit or forbid the admission of foreign immigrants or to admit them *upon such* conditions as it may prescribe and it has the further power to deport aliens who have not been naturalized.

The State can make no law for the exclusion or deportation of aliens although, under the present unjust disposition of the head tax, the entire burden of maintenance for dependent aliens, who have been *improperly* admitted by the exercise of an unwise discretionary power, falls upon the taxpayers, and the State of New York is therefore powerless to deport except at its own expense, powerless to refuse admission, and unjustly obliged to maintain a dependent population for which the imposition of the head tax was originally designed to provide a maintenance fund.

Attention has been directed to this condition in previous reports of this Bureau and it is safe to predict that, unless drastic methods are pursued in the crises which will confront our country during the period following the war, another generation will find this Empire State burdened with alien dependents who will outnumber those of the entire remainder of the United States combined.

Under the present immigration act, the Secretary of Labor is empowered to make rules and regulations which are in effect as binding as the law itself, but it is inconceivable that such rules were ever intended to practically nullify the intention of Congress as they have done by diverting the head tax first under subdivision 7 of rule 22 and later by the suspension of that portion and the insertion of the clause which allows no maintenance charges whatever for alien public charges *even when in custody pending deportation.*

In cases of aliens of the excluded classes who have been both illegally and improperly admitted under bond by the Federal authorities to destinations in New York State, no attempt is made by the Federal Government to compel compliance with the terms of these bonds, and consequently since December 31, 1913, the entire burden of responsibility has fallen upon this State when the public interest and the protection of life and property have demanded that they be finally taken into custody by the authorities.

The fund created by the head tax which amounted in 1914 to $10,700,000; in 1915 to $9,000,000, and in 1916 to $9,000,000, (Reports of the Commissioner General of Immigration) might very well be appropriated pro rata to the State of New York for a maintenance fund. The reports of the Commissioner General of Immigration would appear to indicate (judging from the various recommendations concerning the disposal of the fund) that it has not been and is not being lawfully used for the purpose for which Congress designed it should be appropriated. It is within the jurisdiction of Congress to direct the Secretary of the Treasury to reimburse the State of New York for the moneys expended for maintenance of those defective and dependent aliens who are no longer deportable and for the future care of all such aliens pending deportation.

Unless proceedings are instituted and recovery obtained from this surplus the taxpayers of New York will be confronted by an ever-increasing financial burden, as well as by a menace to the preservation of the stock that is to form the basis of mental and physical fitness so desirable in upbuilding the nation. To the man, woman or child of sound mind and body this country owes and can well afford to bestow necessary education and still remain his debtor. The cost of maintenance of one dependent per annum, as published in reports of various charitable institutions, almost equals the amount of annual salary now received by many school teachers in country districts of the State.

The report of the Commissioner General of Immigration for the year 1916 discloses an alarming increase in the number of excluded classes now arriving at our ports. With a normal increase in arrivals the present law and staff would be unable to cope. *The proportion of certificates for insanity during the past year have been the highest in the history of the Department of Immigration.* The "intensive method" of examination which is only possible during the present practical cessation of immigration *could not be continued* in ordinary times except with a vastly increased staff of examining physicians. What folly to base an "examination" for mental and physical defects on the cursory glance bestowed on a rapidly passing line such as has heretofore been the only method pursued!

MEDICAL SWINDLERS

During the year one Henry J. Schireson who had served six months in the penitentiary in this State was released. He immediately opened an office in Utica under the name of Doctor Fanning and, with his female confederate, proceeded to advertise and distribute the old familiar type of circular. He succeeded in swindling the immigrant population of Oneida county of about $36,000 in about six weeks. At the same time he had opened an office in Schenectady and accumulated about $14,000. He was indicted for grand larceny in Utica and escaped; his assistant, Doctor Fanning, who was employed at a salary of $25 per week as the dupe of this criminal, is now serving a term on an indeterminate sentence of from five to ten years in the Auburn state prison. The record of Schireson appears in the previous report of this Bureau but his reappearance in highly populated immigrant sections of the country is to be expected as long as he remains at large. He has been termed a dangerous criminal by the authorities of various other states and is a serious menace to the community, since he not only swindles these ignorant people of their entire savings, through appeals to their sense of self-preservation, but operates to the detriment of life and health by his unscrupulous deception, errors of diagnosis, and improper treatment.

Many of the advertising quacks who were released either on suspended sentences or fines are again conducting their illegal traffic in this city, and it is difficult to convict them under the present statute but it is to be hoped that, through the constant vigilance of the county medical society in co-operation with our own investigations, they may be eventually stamped out in this State. One of these offices operating in the name of "Doctor Hannen" but in charge of a man named Noack, recently demanded and received $130 as a *first payment* for a guaranteed "cure." This "doctor" was one of those who had received a suspended sentence when convicted in 1915, and this Bureau was obliged to determine whether the poor immigrant should lose his money or proceed to again prosecute Noack. A demand was made for the immediate return of the money and Noack accompanied by two attorneys appeared at this office. The next day a check was received for the entire amount. The Hannen office is financed by one Williams, whose practices are identical with those of Schireson. His offices are replete with "case makers" and "case takers" and as long as he is at large the unsuspecting foreigner will continue to add thousands of dollars per month to his income. A former employee of Schireson has stated that his receipts from the office at 42nd street and Madison avenue amounted to $1,200 per day.

NOTARIES PUBLIC — LAWYERS

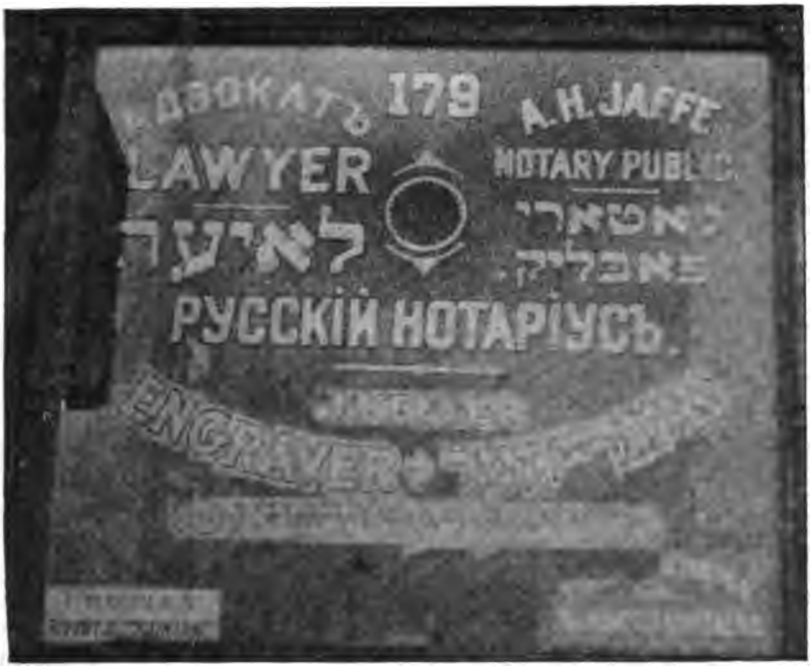
Taking advantage of the fact that in practically all European countries a notary is in effect a lawyer, the abuses described in preceding reports of this Bureau continue to flourish. In May, 1915, this Bureau co-operating with the New York County Lawyers' Association caused the arrest and conviction of 15 persons who were advertising and acting as lawyers and who, in practically every case, were charging their victims inequitable fees in addition to causing loss and distress. In one instance in the course of the investigation, a bill of sale was executed for a cigar stand in the building at 95 Madison avenue on four different occasions, thus selling the same property four different times and in no case inquiring concerning the owners or purchaser of the property or particulars of the transaction. Convictions were obtained in the entire 15 cases as follows:

	Defendant	Sentence
1.	Jan H. Radziwill (Thomas Ackerman)	30 days City Prison
2.	Harry Cantor	Fine $200, or 60 days City Prison
3.	Morris Asofsky	Fine 150, or 20 days City Prison
4.	Joseph Klein	Fine 150, or 30 days City Prison
5.	Carmelo Amoruso	Fine 100, or 20 days City Prison
6.	Hyman Wladover	Fine 100, or 30 days City Prison
7.	Fernand E. Guislin	Fine 50, or 10 days City Prison
8.	Morris Bleetstein	Fine 100, or 10 days City Prison
9.	Joseph Lavitt	Fine 150, or 30 days City Prison
10.	Harry Tanzer	Fine 150, or 20 days City Prison
11.	Hyman Bursky	Fine 100, or 20 days City Prison
12.	Pasquale Viggiano	Fine 100, or 20 days City Prison
13.	Aaron H. Jaffe	Fine 150, or 20 days City Prison
14.	Elias Sprung	Fine 100, or 30 days City Prison
15.	Felix Kunsler	Sentence suspended

The classification of "Lawyers" in this report includes complaints against duly admitted attorneys-at-law, and also persons practicing law in violation of sections 270–270a of the Penal Code who are usually notaries public. The complaints against attorneys-at-law are in the nature of requests by complainants to ascertain the disposition of the claims in the hands of a lawyer, together with a few complaints involving unprofessional conduct, in the opinion of the Bureau, on the part of an attorney-at-law. Cases of unprofessional conduct are referred to the Bar Association for investigation.

Persons who are charged with violation of sections 270–270a of the Penal Code, may be described generally as follows:

Investigations disclose the fact that a number of persons, not admitted to the practice of law, are holding themselves out to the public at large and particularly to immigrants as lawyers. They accept cases, charge fees, etc. Investigations further disclose the fact that generally notaries public, by means of misleading signs and advertising schemes, are the offenders. The method of advertising is generally accomplished by resorting to signs on the premises where the office was located. The signs in general were as follows:



It has been mentioned here that the word "Notar" has great significance to the immigrant or alien by reason of the fact that a "Notar" in Europe is a practicing attorney, and therefore the notaries have usually in large lettering on their windows or upon signs on the premises the word "Notar" presumably meaning notary public, but in fact having greater significance as before mentioned. In some instances he does not openly claim to be a lawyer, but advertises "law office" which is apparently within the law, for he may at times claim to have some duly admitted attorney sharing the office with him. However, actual investigations disclose the fact that the notaries public accept cases, give legal advice, appear in court, charge fees, and in short practice law in violation of sections 270–270a.

MONEY TRANSMISSION

The classifications " banks " and " money transmissions " may both be explained as private bankers, express companies, steamship lines or agents of express companies and steamship lines accepting money for transmission abroad. With the present chaotic conditions in international affairs a great avenue for fraud and exploitation has been opened and still is open to those engaged in the business of forwarding money. The complaints on file in this office are to the effect that money (ranging from $5 to $200), given to a private banker or agent for transmission to a relative or friend has not been received by the addressee, although from four months to two years has elapsed since the money was deposited for transmission. It may be stated at this time that there are other means of fraud and exploitation in the business such as agents of express companies who issue their own receipts and fail to transmit the money to the general agents, thereby taking advantage of changes in rates of exchange, etc. Investigation of the books and records of one agency or bank discloses no entry except the date the money was received for transmission, and a date *which is purported* to be the time the money was transmitted. Proof of proper delivery is practically impossible at this time by reason of conditions abroad and the interruption of communication with European countries. It is therefore necessary in all cases of complaints concerning money transmissions, to delay actual investigation until such time as communication with Europe may be re-established. Money for transmission given to private bankers and express companies, etc., since the beginning of the war which has not been received is, in most cases, impossible to trace. The harvest that unscrupulous bankers, agents, etc., can reap and then have sufficient time to deliberately pack their belongings and disappear with the savings of thousands of poor families is inconceivable.

The method of transmitting money abroad should at once be changed. A city, state or federal department should be designated as a clearing house for all transactions. No revolutionary changes are necessary. It may be arranged that all money accepted by the private bankers, express companies, agents of express companies and steamship lines, and all persons, firms, etc., empowered to accept money for transmission, should be under the direction and supervision of some specially appointed State Bureau or State Department, and no transmissions should be made except under the supervision of said Bureau or Department. Since the bulk of the money transmitted abroad is *from immigrants or aliens in the United States,* it may be suggested that in the State of New York the Bureau of Industries and Immigration might very well be the centralized office or clearing house for such money transmissions, acting in the same capacity as the postal savings division of the Post Office Department.

RAILROAD AND STEAMSHIP TRANSPORTATION

During the year, 298,826 immigrants were admitted to the country of which 79,968 declared New York to be their intended future residence. Therefore, steamship arrivals and the consequent volume of prepaid railroad transportation both first and mixed class was reduced to a minimum since only 54,500 second cabin passengers arrived at this port in 1916. During the year through the co-operation of the Trunk Line Association and the representatives of the railroad committee of the various steamship lines, a series of conferences with the State Industrial Commission were arranged and an agreement effected which has vastly improved conditions on the docks and abolished the entire sale of prepaid third class orders to second class passengers. The system of routing passengers by railroads instead of by trains still exists and entails much hardship to passengers who are unfortunate enough to arrive via a steamship that is assigned to an inferior line. At the expiration of the war or when traffic again approaches in normal proportions the abolition of this practice should be again agitated.

COMMUNITY SURVEYS

At various times during the years 1914, 1915 and 1916, community surveys investigating immigrant living and labor conditions have been made in the locations comprising the 36 towns of Dunkirk, Jamestown, Amsterdam, Little Falls, Johnstown, Gloversville, Massena, Buffalo, Olean, Salamanca, Frankfort, Herkimer, Ilion, Auburn, Binghamton, Charlotte, Corning, Elmira, Fulton, Geneva, Lackawanna, Lancaster, Depew, Lockport, New Hartford, New York Mills, Niagara Falls, Tonawanda, North Tonawanda, Oswego, Rochester, Solvay, Suspension Bridge, Syracuse, Utica, Rome.

This activity has developed an extraordinary amount of knowledge concerning the problems of immigration and the immigrant as he affects the social, economic and industrial welfare of the State. Gradually as the adjustment of the work of our exceedingly small staff permits we will become familiar with conditions existing in every immigrant community in the State and the manner in which the industrial and social situation is affected thereby.

PUBLIC PORTERS

The last annual report of this Bureau enumerated many evils of the present inadequate regulation of licensed runners and porters in this city. These conditions continue to exist and the city authorities admit their inability to further regulate the activities of these persons under the present ordinance. It is therefore recommended that the Labor Law be amended to license all public porters or guides and to supervise their activities as outlined in the special report on proposed legislation previously submitted for your consideration.

GENERAL SURVEY

Complaints: One thousand and forty-four complaints were received and subdivided under 26 classifications. Of these, 611 involved complaints on wage claims, 34 steamship ticket agencies, 11 lodging house violations, 47 bogus lawyers, 43 frauds, 71 employment agencies, 69 banks and 158 miscellaneous complaints, comprising 163 violations of 13 sections of State, Federal and Penal Laws as follows: 25 violations of the Building Law, Article IV; 1 of the Postal Law, section 970; 10 of the Employment Agency Law; 11 of the Judiciary Law; 20 of the Penal Law, sections 270 and 1820a; 32 of the Lodging Place Law; 1 of the Insurance Law, article VII, and 63 of the Labor Law, article II.

In 914 cases, complainant and respondent both resided within New York State; 125 involved one party residing in New York State and one in another State; 2 involved both parties in the same State outside of New York; and 3 both parties residing interstate outside of New York State. Seven hundred and twenty cases under 23 classifications were amicably settled, of which 438 involved wage claims, 30 steamship ticket agents, 23 lawyers, 28 frauds, 45 agencies, 34 banks and 122 miscellaneous actions.

Public Authorities: Seventy-nine cases were referred to public authorities, Municipal, State and Federal, including other divisions of this Commission.

Private Organizations: One hundred and ten cases were referred to private agencies and 72 cases subdivided under 13 classifications are still pending.

Money Settlements to the amount of $66,022.11 were amicably effected, of which $4,657.43 were wages; $445.25 steamship ticket claims; $30.91 claims against lawyers; $1 interpreters; $30.70 insurance; $48.15 frauds; $717.35 banks, and $91.32 miscellaneous claims. *Correspondence:* Included 3,013 letters. *Office conferences:* 795. *Miscellaneous actions:* 587. *Advice and information:* 942 requests for advice and information were received of which 498 were verbal and were referred to 18 public authorities and 91 private agencies for assistance. Four hundred and forty-four were written, of which 84 were referred to 22 municipal, state and federal authorities and 21 to 5 private agencies for disposition. The written requests were received from 37 States, and were practically all in foreign languages.

Inspections, Investigations and Visits totalled 5,367 under 13 classifications, an average 596.33 per month, with 8 investigators in addition to office conferences, complaints, reports, etc.

Lodging Houses: A total of 760 inspections of immigrant lodging houses were made, of which 185 were in Buffalo and vicinity and 575 in New York and its suburbs. One thousand nine hundred and thirty-eight rate cards were issued. One hundred and thirty-five licenses were issued and $1,145 collected in fees. The exodus of reservists has caused many lodging houses to discontinue business.

Custom House Passes, expressmen, hackmen and public porters' licenses were submitted by the respective departments having jurisdiction to regulate the activities of these classes of persons who are licensed to solicit the patronage of the traveling public, as well as arriving immigrants and were approved to the number of 1,238.

To those departments, organizations, employers and individuals who have so generously co-operated in the work of the Bureau during the past year our obligations are gratefully acknowledged.

MARIAN K. CLARK,
Chief Investigator.

COMPARATIVE SUMMARY OF WORK

	1911	1912	1913	1914	1915	1916*
Complaints received	515	1,112	2,121	3,482	2,071	1,044
Advice and information	551	380	798	2,571	2,244	942
Total	1,066	1,492	2,919	6,053	4,315	1,986
Inspections	1,588	1,821	1,779	†3,522	5,043	3,749
Thereof: Labor camps	272	238	185	†689	824	‡
Lodging places	40	616	448	†1,130	1,424	760
Other	1,276	967	1,146	†1,703	2,795	2,989
Re-inspections	§	501	289	§	325	146
Investigations	749	844	1,838	3,029	2,160	1,472
Total investigations and inspections	2,337	3,166	3,906	6,551	7,528	5,367
General activities:						
Correspondence	§	§	§	11,902	5,828	3,013
Office conferences	§	§	§	1,539	1,081	795
Miscellaneous actions	§	§	§	864	651	587

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* This fiscal year consists of nine months, October 1, 1915, to June 30, 1916.

† Inclusive of re-inspections.

‡ All labor camp inspections in 1916 were made after June 30, 1916, i. e., after the termination of the fiscal year.

§ Data not available.

COMPLAINTS

	Received		
Subject	Total	Thereof involving violation of law	Settled by Bureau
Accidents	6	....	3
Assault	1	....	....
Baggage	6	....	....
Banks	69	26	34
Benevolent societies	4	....	....
Deportation	2	....	1
Disorderly houses	5	....	3
Domestic relations	7	....	4
Employment agencies	71	10	45
Expressmen	1	....	....
Extortion	3	....	3
Frauds	43	....	28
Hackmen	2	....	2
Insurance	7	1	6
Interpreters	1	....	1
Labor camps	2	....	1
Larceny	5	....	5
*Lawyers	47	29	23
Loans	7	....	5
Lodging place violations	11	11	9
Lost articles	5	....	5
Lost immigrants	1	....	1
Notaries	3	2	3
Steamship ticket agencies	34	21	30
Wages	611	63	438
Miscellaneous	90	....	66
Total	1,044	163	720

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* This classification refers to:
(a) Persons practicing law in violation of sections 270–271 of the Penal Code.
(b) Charges of unprofessional conduct on the part of lawyers.
(c) Requests to ascertain disposition of cases in hands of lawyers.

COMPLAINT CASES INVOLVING VIOLATION OF LAW

Subject and Law	Number of cases
Banks:	
Banking Law, Article IV	25
Postal Law, section 970	1
Employment agencies:	
Laws 1910, chapter 514	1
Laws 1910, chapter 700	9
Lawyers:	
Judiciary Law, chapter 468	11
Penal Law, section 270	18
Lodging places:	
Laws 1910, chapter 548	11
Notaries:	
Penal Law, section 1820-a	2
Steamship ticket agencies:	
Laws 1911, chapter 415	10
Laws 1911, chapter 578	9
Laws 1911, section 1563	2
Insurance:	
Insurance Law, Article VII	1
Wages:	
Labor Law, Article II	63
Total	163

GEOGRAPHICAL SOURCE OF COMPLAINTS

NOTES

1 = Both parties residing within the boundaries of New York State.
2 = One party residing within New York State and the other without the State.
3 = Both parties residing in the same state, outside of New York State.
4 = Both parties residing interstate — outside of New York State.

Subject	Source 1	2	3	4	Total
Accidents	4	2	....	....	6
Assault	1	....	....	....	1
Baggage	5	1	....	....	6
Banks	58	11	....	....	69
Benevolent societies	3	1	....	....	4
Deportation	1	1	....	....	2
Disorderly houses	5	....	....	....	7
Domestic relations	5	2	....	....	5
Employment agencies	70	1	....	....	71
Expressmen	....	1	....	....	1
Extortion	3	....	....	....	3
Frauds	32	11	....	....	43
Hackmen	2	....	....	....	2
Insurance	5	2	....	....	7
Interpreters	1	....	....	....	1
Labor camps	2	....	....	....	2
Larceny	4	....	....	1	5
Lawyers	45	1	1	....	47
Loans	5	2	....	....	7
Lodging place violations	11	....	....	....	11
Lost articles	5	....	....	....	5
Lost immigrants	....	1	....	....	1
Notaries	3	....	....	....	3
Steamship ticket agencies	32	1	....	.1	34
Wages	539	71	1	....	611
Miscellaneous	73	16	....	1	90
Total	914	125	2	3	1,044

REQUESTS FOR ADVICE AND INFORMATION

SUBJECT	Verbal	Written	Total
Accidents	97	27	124
Agricultural opportunities	......	1	1
Assault	2	....	2
Baggage	5	....	5
Bankruptcy	1	2	3
Banks	3	14	17
Breach of contract	6	....	6
Deportation	3	5	8
Domestic relations	8	6	14
Employment	48	25	73
Employment agencies	24	7	31
Federal immigration acts	3	6	9
Foreign affairs	7	3	10
Frauds	......	30	30
Information re cases in hands of other agencies	26	11	37
Insurance	6	9	15
Labor camps	......	1	1
Larceny	6	....	6
Lawyers	7	19	26
Legal advice	69	21	90
Loans	5	5	10
Lost articles	......	18	18
Lost immigrants	......	4	4
Naturalization	18	50	68
Notaries	......	1	1
Partnership	2	2	4
Prisoners of war	......	2	2
Real estate	7	34	41
Relief and assistance	7	1	8
Steamship tickets	3	7	10
Stocks	2	6	8
Translations	2	....	2
Transmission	8	29	37
Wages	83	41	124
Miscellaneous	40	57	97
	498	*444	942

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* Of these, 245 were from places outside of New York State.

INSPECTIONS AND INVESTIGATIONS

SUBJECT	Number
Chinese laundries	518
Collection agencies	4
Docks, ferries and terminals	438
Employment agencies	1,073
Immigrant homes	295
Immigrant lodging places	760
Medical	54
Miscellaneous	151
Money transmission	78
Porters	177
Runners	33
Steamship ticket agencies	168
Cases — investigations	1,095
Lodging place violations	16
Information and advice	159
Visits	146
Cases — Buffalo	202
Totals	5,367

MATTERS REFERRED TO OTHER AGENCIES

	Complaints	Requests for Advice and Information		Total
		Verbal	Written	
American Federation of Labor	......	1	....	1
Americanization Committee	......	....	1	1
Bonded attorneys	5	4	5	14
Canadian Government	......	....	2	2
Children's Aid Society	......	....	1	1
City Court	1	6	....	7
Commissioners of Labor	......	....	9	9
Commissioner of Licenses	43	16	4	63
Consuls:				
Austria-Hungary	......	6	2	8
France	......	....	1	1
Great Britain	......	1	....	1
Italy	......	3	5	8
Corporation Counsel	......	1	....	1
Department of Charities	......	7	....	7
District Attorney	1	1	4	6
Domestic Relations Court	......	1	1	2
Governors	......	....	1	1
Industrial Commissions	......	....	1	1
Legal Aid Societies	80	70	9	159
New York County Lawyers' Association	21	....	....	21
New York County Medical Society	1	....	....	1
Police Department	1	4	4	9
Private attorneys	3	16	5	24
Receiver in bankruptcy	......	....	1	1
New York State:				
Banking Department	25	....	3	28
Employment Bureau	......	46	10	56
Factory Inspection, Bureau of	......	1	....	1
Highway Department	......	3	....	3
Industrial Commission	......	....	2	2
Insurance Department	2	....	....	2
Workmen's Compensation, Bureau of	......	78	8	86
Superintendent of the Poor	......	....	1	1
Surrogate's Court	......	....	1	1
United States:				
Department of Agriculture	......	2	....	2
Department of Labor	......	....	6	6
Immigration Authorities	2	12	10	24
Naturalization Bureau	......	2	....	2
Navy Department	......	....	2	2
Post Office Department	4	....	6	10
Widows' Pension Bureau	......	1	....	1
	189	282	105	576

LICENSING OF LODGING HOUSES

	Fiscal Year		
	1916*	1915	1914
Licenses issued	135	202	232
Fees collected	$1,145	$1,725	$2,500
Inspections of:			
Licensed houses	499	851	487
Exempt houses	224	502	507
Other	37	71	136
Total	760	1,424	1,130
Rate cards issued	1,938	2,822	1,680

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* This fiscal year consists of nine months, October 1, 1915, to June 30, 1916.

CASES

Subject	Closed	Pending	Total
Accidents	3	1	4
Baggage	4	1	5
Banks	34	7	41
Benevolent societies	......	2	2
Deportation	1	....	1
Disorderly houses	3	1	4
Domestic relations	4	1	5
Employment agencies	45	1	46
Extortion	3	....	3
Frauds	28	10	38
Hackmen	2	....	2
Insurance	6	....	6
Interpreters	1	....	5
Labor camps	1	1	1
Larceny	5	....	2
Lawyers	23	3	26
Loans	5	....	5
Lodging place violations	9	2	11
Lost articles	5	....	5
Lost immigrants	1	....	1
Notaries	3	....	3
Steamship ticket agencies	30	3	33
Wages	438	28	466
Miscellaneous	66	11	77
Total	720	72	792

LICENSES APPROVED

Subject	Number
Custom house passes	20
Expressmen	24
Hackmen	938
Porters	181
Runners	75
Total	1,238

MONEY SETTLEMENTS

SUBJECT	Amount
Banks	**$717 35**
Frauds	**48 15**
Insurance	**30 70**
Interpreters	**1 00**
Lawyers	**30 91**
Miscellaneous	**91 32**
Steamship ticket agencies	**445 25**
Wages	**4,657 43**
Total	**$6,022 11**

Part VIII

REPORT OF BUREAU OF INDUSTRIAL CODE

REPORT OF DEPUTY COMMISSIONERS

(In Charge of Bureau of Industrial Code)

To the Industrial Commission:

Herewith is submitted the report of the Bureau of Industrial Code for the nine months ending June 30, 1916. During this period the Bureau has been principally engaged in the consideration of applications for the acceptance of fire escapes as required means of exit, and of appeals for exemption from the requirements to enclose interior stairways in partitions of fire-resisting material. Other appeals considered at this time were for exemption from the requirements to extend interior stairway to the roof, provide fireproof passageway to the street, provide self-closing gates on elevator openings, and to construct doors to open outwardly, etc.

This work consists of a careful review of all papers in the case, including the original application of appeal, survey of the premises, inspector's report, special report if there be one, and all data available, after which a decision is rendered and report of such decision is made to the entire Commission. These reports are made at the close of each calendar month, each Deputy Commissioner making a separate report of the case handled. The action of the Deputy is invariably approved by the Commission. In connection with the consideration of these cases, 647 special inspections were made by the Deputy Commissioners and employees of this Bureau.

Because of the large number of petitions under section 52a of the Labor Law, for variation from the requirements of the law or the industrial code, or for review of orders, which we were receiving at this time. and because of the work incidental to the preparation of the Industrial Code rules, the consideration of applications and appeals as outlined above was transferred to the Bureau of Inspection on March 3, 1916.

The Bureau, during the period covered by this report, considered 296 petitions for variation, and 224 petitions for review of orders. A public hearing in accordance with the provisions of section 52-a of the Labor Law was held in each case, making a total of 520 such cases, which were the subject of public hearing. In each case all data submitted were considered and a resolution setting forth the recommendation of the Bureau was prepared and transmitted to the Commission.

The work of extending the Industrial Code has not advanced as rapidly as we had desired, due partly to the vast amount of other work which has since been transferred to other Bureaus. However, the Bureau prepared data necessary for the adoption of one rule and the amendment of three rules, one of which is a complete specification for the construction of and the installation of interior fire alarm signal system. Twenty-one public hearings were held in various parts of the State, and this rule and the amendments were adopted by the Commission and now form part of the Industrial Code.

Sixty-nine applications for approval of material and devices were received and acted upon. These include such material as fire doors, fireproof windows, fire alarm signal apparatus, and mechanical and electrical devices. Applicants for the approval of fireproof and fire-resisting material are required to submit full and complete report of the fire and water tests as required by the rules of the Industrial Code. When tests are conducted in laboratories located in or near New York City, the tests are witnessed by the Deputy Commissioners or their representatives. Applicants for the approval of mechanical or electrical devices are required to submit a sample of the device or a working model, together with full descriptive matter. Whenever possible, a field test of the device is made and investigated under actual working conditions. In this connection it might be well to state that when it is brought to our attention that any material, which is subject to approval, has failed in actual practice, although not in a building subject to inspection by the Industrial Commission, a personal investigation is made, if the same is possible; if not, full data is gathered from every source available. The Deputy Commissioners personally investigated many fires and fatal accidents.

This Bureau is now, at the close of this period, about to take up the work of formulating additional industrial code rules, and has recommended that advisory committees be appointed in accordance with the provisions of section 52a of the Labor Law, and to assist in the formulation of rules covering the following subjects: Mines and Quarries, Width of Aisles in Factories, Safeguarding Dangerous Machinery, Artificial Light, Dangerous Trades and

Wood Alcohol, and Boilers; these committees to be composed of representatives of employers, employees and experts in the various interests and industries affected. We have also recommended that the experts employed by the Commission be assigned to assist in this work.

We recommend that the Commission seek an appropriation from which may be paid the necessary traveling expenses of the members of the advisory committees. We have learned from the experience of the Industrial Board that it is difficult to always have present at the meetings of the advisory committees representatives of employees. Their absence is due mainly to a lack of funds and we strongly urge the appropriation recommended.

The staff of the Bureau has been as follows: During the entire period, two Deputy Commissioners, one Fire Prevention Engineer, two Stenographers; from September 1, 1915, to March 31, 1916,— one Supervising Inspector; from January 7, 1916, to March 7, 1916, two Factory Inspectors.

A summary of the work of the Bureau follows.

Richard J. Cullen,
Thomas C. Eipper,
Deputy Commissioners.

HEARINGS HELD

On Petition for Variation		**296**
Granted	**193**	
Denied	**60**	
No action necessary	**43**	
Total	**296**	
On Petition for Review of Orders		**224**
Affecting exits:		
Denied	**40**	
Granted	**8**	
No action necessary	**14**	
Affecting fire alarm signal system:		
Denied	**105**	
No action necessary	**41**	
Granted	**16**	
Total	**224**	
Industrial Code Rules		**21**
Rules adopted (one)	**5**	
Rules amended (three)	**16**	
Total	**21**	
Total		**541**

APPLICATIONS FOR

The acceptance of fire escapes as second means of exit in buildings over five stories in height:	
Approved	148
Denied	94
Total	242
Exemption from the requirement to enclose interior stairways in partitions of fire-resisting material in buildings not over six stories in height:	
Approved	87
Denied	52
Total	139
Exemption from the requirement to extend interior stairway to roof:	
Approved	52
Denied	9
Total	61
Exemption from the requirement to provide self-closing gates at elevator openings:	
Approved	1
Denied	3
Total	4
Exemption from the requirement to provide doors at elevator openings:	
Approved	1
Denied	1
Total	2
Exemption from the requirement to screen exterior stairways:	
Approved	......
Denied	1
Total	1
Exemption from the requirement to maintain unobstructed exits:	
Approved	......
Denied	1
Total	1
Exemption from the requirement to arrange doors to open outwardly:	
Approved	1
Denied	4
Total	5
Exemption from the requirement to make exit doors self-closing:	
Approved	......
Denied	1
Total	1
Exemption from the requirement to install fireproof doors in stairway enclosures:	
Approved	......
Denied	1
Total	1

Exemption from the requirement to provide fireproof passageway to street:	
Approved	2
Denied	1
Total	3

MATERIAL APPROVED

Mechanical, electrical and automatic devices for use on elevator cars and hoistways:	
Electrical	20
Mechanical	7
Automatic	2
For use on fire doors:	
Automatic closing device	2
Panic bolt	1
For use on corner staying machines:	
Safety link	1
For use on scaffolds:	
Safety bracket	1
For use in ventilating systems:	
Air washer	1
For use in construction of fire alarm signal systems:	
Gongs	7
Signal stations	2
Control boards	5
Batteries	4
Horns	2
Trouble bells	2
Gong relays	2
Insulating material	1
For use in construction of water closets:	
Closet flanges	2
Fireproof material:	
Fire doors	4
Fireproof windows	2
Total	68

Fire alarm signal systems:	
Approved	1

Part IX

REPORT OF BUREAU OF FIRE HAZARDS, BOILERS AND EXPLOSIVES

REPORT OF CHIEF ENGINEER

(IN CHARGE OF BUREAU OF FIRE HAZARDS, BOILERS AND EXPLOSIVES)

To the Industrial Commission:

Pursuant to your instructions, I am herewith submitting a report of the Bureau of Fire Hazards, Boilers & Explosives for the period from October 1, 1915, to June 30, 1916, giving a financial statement of boiler and magazine fees received, also the work performed by the inspectors.

BOILERS AND EXPLOSIVES

Inspections of boilers	1,587
Inspections of magazines	765
Special inspections	37
Special investigations	4,430
Magazine certificates issued	538
Boiler certificates issued	1,333
Orders issued for magazines	317
Orders issued for boilers	387
Orders complied for magazines	284
Orders complied for boilers	307

FINANCIAL

Boiler inspection fees	$7,075
Magazine license fees	4,930
	$12,005

Respectfully submitted,

George A. O'Rourke,

Chief Engineer.

Part X

OPINIONS OF THE ATTORNEY-GENERAL CONSTRUING PROVISIONS OF LABOR LAWS

Compiled by the Bureau of Statistics and Information

Note.— In the following pages are printed all of the opinions rendered by the Attorney-General in construing labor laws during the year 1916. Similar opinions of earlier years may be found in previous reports of the Commissioner of Labor. The opinions are here arranged under general subject headings. Section numbers in these headings refer to the general Labor Law. Opinions dealing with that law are placed first, arranged according to section numbers, followed by opinions referring to other laws.

OPINIONS OF ATTORNEY-GENERAL

APPLICATION OF EIGHT HOUR LAW (§ 3)

(a) Applies to Railroad Employees Building Bridges of Spur Track or Switch to State Institution

February 15, 1916.

A railroad corporation contracting to do the work connected with the building of bridges upon a spur track or switch upon State property to connect a State institution with its main line or lines cannot be relieved from compliance with the eight hour provision of the Labor Law.

INQUIRY

Can the State make a contract with the Erie Railroad Company to build or repair the bridges upon a spur track upon property owned by the State at Letchworth Village, which spur or switch connects such institution with the main lines of such railroad, and not require such railroad company to comply with the eight hour labor law.

OPINION

It appears by letter from Hon. L. F. Pilcher, State Architect, that by chapter 727, Laws of 1915, an appropriation was made for Letchworth Village as follows:

> "For replacing two temporary wooden bridges on the spur track with permanent structures, $11,000."

Pursuant to this appropriation the Board of Managers took the matter up with the Erie Railroad Company, which is the company operating the institution switch at Letchworth Village, and the company prepared plans and specifications for the replacing of the temporary wooden bridges on a cost basis, with an up-set price of $10,989.

The Board of Managers thereupon authorized the making of a contract with such railroad company for the construction of such bridge for the above mentioned sum, without any public bidding, as the company will not operate its trains over a spur track unless it does the work of maintenance and repair.

The contract, which contained the usual obligatory clause concerning the eight hour day labor, was drawn and forwarded to the company for execution by it.

It is claimed by the officers of the railroad company that they made the estimate for the work upon a basis of ten hours work per day, which is the customary time their men work.

The right of way for the spur and the bridges about to be rebuilt, is all upon State property. The ties and rails are also owned by the State. The bridges are necessary to place the spur in a safe condition for the purpose of running cars and engines from the main line of said road to the institution, and is kept in repair throughout the year by the railroad company with their own labor and within their own time, for which the State pays.

The provisions of the Labor Law which apply to the subject under consideration are found in article II of the Labor Law, and section 3 thereof reads in part as follows:

> § 3. *Hours to constitute a day's work.* Eight hours *shall* constitute a legal day's work for all classes of employees in this State except those engaged in farm and domestic service unless otherwise provided by law. This section does not prevent an agreement for over work at an increased compensation except upon work by or for the State or a municipal corporation, or by contractors or sub-contractors therewith. Each contract to which the State or a municipal corporation or a commission appointed pursuant to law is a party which may involve the employment of laborers, workmen or mechanics *shall* contain a stipulation that no laborer, workman or mechanic in the employ of the contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract shall be permitted or required to work more than eight hours in any one calendar day except in cases of extraordinary emergency caused by fire, flood or danger to life or property. * * *.
>
> Each contract for such public work hereafter made shall contain a provision that the same shall be void and of no effect unless the person or corporation making or performing the same shall comply with the provisions of this section; and no such person or corporation shall be entitled to receive any sum nor shall any officer, agent or employee of the State or of a municipal corporation pay the same or authorize its payment from the funds under his charge or control to any such person or corporation for work done upon any contract, which in its form or manner of performance violates the provisions of this section. * * *.

These provisions are all mandatory and unmistakable, and the fact that the railroad company made its estimate upon a ten hour per day basis, does not and cannot relieve either the railroad company or the State officials having the matter in charge from compliance with the statute both in respect to the hours per day that can be worked upon such job and the provisions that must be inserted in the contract for such work.

A railroad company would have the right to enter into an agreement wih its employees to work over eight hours per day at increased compensation except upon work by or for the State or a municipal corporation, but it would have no right even at increased compensation to require or permit its laborers to work more than eight hours per day upon the work in question for it is State work and paid for by the State, and is located upon State property, and it was not justified in basing its estimate upon a ten hour per day labor, but whether it did or not, it would be violative of the plain and expressed provision of the statute to allow the work to be done by ten hour labor. It would be equally violative of the law to make a contract without inserting a stipulation that no laborer, workman or mechanic doing work upon such bridges should be allowed or permitted to work over eight hours per day.

This provision has been held to be constitutional by our Court of Appeals in *People ex rel Williams* v. *Metz,* 193 N. Y. 148.

The failure to insert an eight hour per day provision in the contract, or for the State officers having the matter in charge to allow, or the railroad company to exact or permit such laborers to work more than eight hours per day except in cases of emergency would vitiate the whole contract, render it unenforcible, and subject the company to a forfeiture of any and all sums earned by it upon such work.

Section 4 provides that any State officer having a duty to act in the premises who violates, evades or knowingly permits any evasion of the act, shall be guilty of malfeasance in office and be suspended or removed from office, and any citizen may maintain proceedings for such suspension or removal, or for the purpose of securing a cancellation or avoidance of the contract.

Section 1271 of the Penal Law makes any person or corporation contracting with the State or a municipal corporation which requires more than eight hours' work for a day's labor, guilty of a misdemeanor, and upon conviction, will be subject to a fine and the contract may be declared forfeited at the option of the municipal corporation.

No State officer has the right, power or authority to waive the provisions of the statute, and any attempt in that direction would not only jeopardize their positions but render them liable for criminal prosecution for malfeasance in office.

My attention has been called to section 19-a of chapter 111 of the Laws of 1914 which applies to the construction of these two bridges and reads as follows:

> **§ 19–a.** ***Contracts for connecting institution with line of public service corporation.*** **In all cases in which the contracts to be let are for the purpose of connecting an institution with the system of line or lines maintained or operated by any public service corporation or repairing or improving any such connection, such public service corporation shall not be required to make the preliminary deposit or to give the certified check upon submitting its proposal, nor to give any bond for the performance of the work, nor shall any advertising for proposals be necessary where the public service corporation is to perform the work.**

It will be observed that the above provision is silent as to the number of hours labor which can be contracted for or permitted as a day's labor and it therefore follows that no change in the eight hour labor law was intended by the Legislature. It simply exempts public service corporations from making the preliminary deposit or the giving of a bond upon the submission of a proposal, and the giving of a bond for the performance of the work, and also does away with the necessity of advertising for proposals, as required by section 14 of the same act in all cases where the public service corporation is to perform the work, but there is nothing in the act that can be construed as exempting such public service corporation from the provisions of the eight hour labor law, and if there had been any intention on the part of the Legislature to exempt such corporation from the eight hour labor law, in view of the fact that such labor law has been the subject of a recent constitutional amendment, and much litigation, there would have been some affirmative, positive provision to that effect. There is no conflict or inconsistency between the provisions of section 19-a and the Labor Law, so there can be no repeal by implication of such Labor Law and the latter must be held to apply to the construction of the bridges mentioned in the inquiry.

I do therefore, advise you that a contract should not be made with the Erie Railroad Company, or any other public service corporation, which would relieve it or them from full compliance with the eight hour labor law.

EGBURT E. WOODBURY,
Attorney-General.

TO HON. L. F. PILCHER, *State Architect, Albany, N. Y.*

(b) Applies to City and County Building Employees

June 23, 1916.

The Board of Trustees of the City and County Hall, Buffalo, N. Y.

GENTLEMEN.—Your letter of June 15, 1916, which perhaps more properly should be answered by your county and city attorneys, contains such a long and involved statement of facts and requests that in replying I feel obliged to quote your letter in full. You state that:

> The Board of Trustees of the City and County Hall, Buffalo, are appointed pursuant to and derive their powers from Chap. 31, Laws of 1880 and Chap. 83, Laws of 1892, and the several acts amending and supplementing the same. The Board employs thirty (30) men, exclusive of its Secretary, Superintendent and Chief Engineer, to wit: 4 watchmen, 15 janitors, 1 laborer, 1 cabinet repairer, 2 assistant engineers, 3 firemen and 4 elevator conductors and in addition 27 charwomen, whose work and duties are such as usually pertain to such employees. All the men employees are paid a regular fixed monthly salary, except the Secretary, Superintendent and Engineer, who are paid a yearly salary. The charwomen receive a daily wage.
>
> The regular work of most of these men employees consists of eight hours on all ordinary working days, four hours on all holidays, eight hours of 'watch duty' every sixth Sunday and also such time in excess of eight hours per day, or 'over time' as the necessary alterations, repairs, etc. in the building, snowstorms and the like, necessitate. The regular work of the rest, the watchmen, the engineers, the firemen and the laborer, requires them to labor on all holidays and many Sundays, so that some of the men work many more hours per year than do others. All are regularly employed, the youngest in point of service having been employed upwards of 3 years.
>
> All this work, daily, holidays, Sundays and 'overtime' is regarded as the 'regular work' of the several employees and there is no extra compensation allowed. Unexcused absence means a corresponding deduction in the regular salary.
>
> There is more or less dissatisfaction owing to the greater number of hours some are required to labor than others and to the 'overtime' occasionally required, without extra compensation. The men have asked an increase in their monthly salary and apparently would be satisfied with the work and working conditions, including the matter of 'overtime' and the difference in working hours, should the requested increase be granted.

The Board of Trustees, recognizing that there may be some cause for dissatisfaction on the grounds stated, contemplates not only an increase in pay, but also the paying of an hourly 'wage' instead of a monthly 'salary.' That is, instead of paying to each man employee a 'salary' at a fixed rate per month for all the work he does, whether daily, on holidays, Sundays or 'overtime,' to pay to him a 'wage' at a fixed rate per hour for each and every hour he labors, whether daily, on holidays, Sundays or 'overtime' with no increased compensation under any circumstances.

There is to be, of course, no reduction of the working force, nor are the men to be required to work 'overtime' except when extra work is to be done, or when necessity demands, or when it is desirable that some job be speedily accomplished. This 'overtime' the men will be glad to do if they are paid for it.

I may say, further, that all our pay rolls are subject to the scrutiny and approval of, and are sent regularly semi-monthly to the State Civil Service Commission.

I am directed by the Board to request your opinion as to whether the contemplated plan will in anyway conflict with the provisions of the Labor Law and in addition to ask your opinion on the following specific questions:

1. In view of the provisions of the several statutes creating the Board of Trustees and defining its powers and duties, are its employees 'persons regularly employed in state institutions'?
2. Has this Board the power in any event to make an agreement with its employees for 'over work' or work in excess of eight hours a day?
3. If so, has it the power to make such agreement at the same rate fixed for regular time or *must* it be at 'an increased compensation'?
4. If only at 'an increased compensation' may such increase be nominal so long as it is an actual increase, or must it be substantial?
5. If this Board should adopt the plan contemplated, *must* the 'wages' be fixed at the 'prevailing rate for a day's work in the same trade or occupation' in this locality, providing there is a 'prevailing rate' which can be ascertained?
6. Has this Board the power to require its employees to work 'overtime' when necessary or desirable, without extra compensation, if the present system of paying a fixed monthly 'salary' be continued?
7. Will the contemplated plan, if put into operation, conflict with any provision of the Labor Law or any statute, other than suggested by the foregoing?

Your early reply, together with any suggestions which you deem pertinent or helpful, will be gratefully received.

In answer to question one, I would reply that the persons employed by you in the City and County Hall are not persons employed in a State institution. The words "State institution" have been variously interpreted when occurring in different statutes, but it is sufficient to observe in the case at hand that the employees are hired, paid by and perform work for local municipalities.

With respect to question two, if you mean to ask whether the trustees can agree with the employees to work more than eight hours a day (disregarding any question of emergency work made necessary by fire, flood or danger to life or property) I shall answer in the negative. The Board has power however to agree with its employees for emergency work in excess of eight hours a day, and to agree with them upon the compensation the employees shall receive for such emergency work. But bear in mind that the work on holidays and the watch duty on Sundays referred to in your letter is not emergency work unless it should fall within the term "cases of extraordinary emergency caused by fire, flood or danger to life or property." The work on Sundays and holidays is regular work, and it may be performed and paid for, but not in excess of eight hours in any one day. No statute that I am aware of forbids such work on Sundays and holidays.

Question three. As I have indicated in my answer to the last question, overtime cannot be contracted for unless it takes the form of emergency work. If emergency work is contracted for, it need not be at an increased compensation. Increased compensation is necessary only where overtime is permitted by the statute, and overtime work is not permitted in service for the State or a municipality.

The answer to question four is involved in the answer to question three.

Question five. Wages may be fixed at a certain rate per hour for week days, Sundays or holidays (People ex rel. Usoy v. Waring, 52 A. D. 36). No hours in excess of eight a day. Emergency work may be fixed at the same rate per hour. Payment by the hour must be proportionate to the prevailing rate of wages for a day of eight hours.

Question six reads:

> Has this board the power to require its employees to work 'overtime' when necessary or desirable, without extra compensation, if the present system of paying a fixed monthly 'salary' will be continued?

The Board may require its employees to work more than eight hours in cases of emergency, otherwise not. It may require the emergency work to be performed without additional compensation. This results from the inherent power of government to take the necessary steps to protect its property in cases of exposure to serious loss, and from the wording of § 3 of the Labor Law which provides that no laborer, workman or mechanic "shall be permitted or *required* to work more than eight hours in any one calendar day except in cases of extraordinary emergency caused by fire, flood or danger to life or property."

I know of no State statutes which pertain to the subject you have under consideration other than those I have discussed.

Yours very truly,

E. E. WOODBURY,
Attorney-General.

By C. T. DAWES, *Deputy Attorney-General.*

(c) Applies to Dredge and Tug Boat Employees Doing Barge Canal Work

July 25, 1916.

Hon. V. T. Holland, *Assistant Secretary, State Industrial Commission, Albany, N. Y.*

Dear Sir.— Receipt is acknowledged of your letter of July 1st, relative to the complaint of violation of section 3 of the Labor Law by H. P. Burgard Company, in operating their dredge "Pathfinder" and tug "Tonawanda" more than eight hours a day on a barge canal contract.

In letters addressed to the Superintendent of Public Works dated respectively April 21 and July 20, 1915,* application of the eight-hour law (section 3 of the Labor Law) to the operation of tug boats was considered. We there came to the conclusion that the eight-hour law applied to employees working on tug boats. I can see no reason why the law should not equally apply to employees working on dredges.

I make little question that the Burgard Company is absolutely prohibited under section 3 from employing their tug boat and dredge men in a continuous shift of more than eight hours while doing Barge Canal terminal work. However, the situation disclosed in the report submitted indicates that the men are employed only a part of the time, probably less than eight hours during the day, in State employment, from 6 A. M. to 6 P. M.

In my opinion this does not alter the case. The eight-hour law is to a certain extent a police power measure, passed to conserve the health, safety and comfort of persons employed by the State. The courts have denied the necessity is so great that the Legislature may pass a statute forbidding private employers from entering into contracts for the employment of servants for more than eight hours a day, although the Court of Appeals has recently recognized the power of the Legislature to restrict the hours of employment of women. Under the Constitution as amended power has now been given to the Legislature to control the hours of labor of persons employed by the State directly.

There being no question then of the validity of the provision in the State contract as to the hours of labor or of the prohibition against varying these by any special contract, except in cases of extraordinary emergency, etc., we may examine the reason for the rule, and determine whether or not persons may be employed twelve hours a day, and by giving only a part of their time, or eight hours, to the State avoid the prohibition of the statute.

The purpose of the law being, as stated above, to conserve the health, safety and comfort of employees of the State, it is clear that the legislative intention is directly violated by permitting the employment of men who are required to work four hours longer in private employment. The very spirit of the provision of the statute, as inserted in the contract, requires that not only shall the employees be protected from any such imposition by the contractor, but that even willingly they shall not be permitted to extend their time of labor by special agreement.

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* For the letter of July 20, 1915, see Annual Report of the State Industrial Commission for 1915, pp. 386, 387; the letter of April 21, 1915, inadvertently omitted from the Report for 1915, reads as follows:

Answering your letter of yesterday concerning the application of the eight-hour provision of the Labor Law to workmen (captains, engineers and deckhands) on tugs about to be furnished and employed under contract with the State to tow boats on the finished portions of the Barge Canal, I would reply that in my opinion Section 3 of the Labor Law containing the eight-hour provision is sufficiently broad to cover the situation you inquire about. The contract is one for public work, and the employees would seem to fall within the term 'laborers, workmen or mechanics.'

Having in mind the various decisions of the courts and the rulings of this Department (which I do not take the time to cite), I have no hesitancy in advising you that the contract would be subject to the eight-hour provision.

Perhaps if the work done after hours were of a different kind we would not be able to control the situation. However, in this case we have the men employed continuously for twelve hours on the same boats and in work for private persons and for the State of substantially similar character.

It further appears that while the towing actually required each day could be done in five hours, nevertheless, the men are subject to call for towing any time between 6 A. M. and 6 P. M. Under these circumstances, the fact that seven hours of their time is given to other employment than that of the State, seems to me immaterial.

I have not disregarded the point that the master of the tug has a federal license permitting him to do lake and harbor towing from 6 A. M. to 6 P. M.; but the State may make its own choice of methods of employment, and having made this choice, by directing through solemn mandate of the Legislature, that laborers, workmen or mechanics shall not be permitted or required to work more than eight hours in any day, the permission of the Federal Government does not interfere with the agreement made between the State and its own contractor.

In concluding, let me emphasize that this letter is based on the assumption that the dredge and tug are available for use of the State contractor at any time between 6 A. M. and 6 P. M., and that, in practice, the dredge and tug have been actually used by the State contractor up to 6 P. M.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By E. G. GRIFFIN, *Deputy Attorney-General.*

(d) Applies to Assistant Engineers in Craig Colony, a State Institution

March 23, 1916.

V. T. HOLLAND, ESQ., *Assistant Secretary, State Industrial Commission, Albany, New York.*

DEAR SIR.— I have your letter of March 21, 1916, inquiring whether assistant engineers employed in the Craig Colony come within the rule of section 3 of the Labor Law, prohibiting more than eight hours' work except in emergency.

Section 3 of the Labor Law as amended by chapter 494 of the Laws of 1913, provides in part as follows:

> Eight hours shall constitute a legal day's work for all classes of employees in this state except those engaged in farm or domestic service unless otherwise provided by law. * * * Nothing in this section shall be construed to apply to stationary firemen in state hospitals nor to other persons regularly employed in state institutions except mechanics. * * *

It is clear that Craig Colony is a "state institution" within the definition of that term adopted by the various attorneys-general in construing this section of the Labor Law, and within the tests applied in *Matter of Burns* vs. *Fox*, 98 A. D. 507.

That mechanics employed in State institutions are protected in their hours of labor as well as in their right of compensation by section 3 of the Labor Law, was held by Attorney-General Carmody in an opinion dated July 3, 1913. (Report of the Attorney-General, 1913, page 453.)

That an assistant steam engineer is a "mechanic" within the meaning of section 3 of the Labor Law was also determined by Attorney-General Carmody in an opinion dated November 12, 1913 (Report of the Attorney-General, 1913, page 656). He there held that in State hospitals the employees in the engineer's department, except the chief engineer, are mechanics. There is no reason for a different rule in the Craig Colony.

I therefore advise you that the operation of a power plant with two shifts of twelve hours each is in contravention of section 3 of the Labor Law.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By J. S. Y. IVINS, *Deputy Attorney-General.*

EMERGENCY WORK (§ 3)

(a) Canal Workmen, Laborers and Mechanics Receiving Fixed Monthly or Yearly Compensation by Annual Appropriation Act of 1916 May Have Extra Pay for Emergency Service

October 9, 1916.

The eight-hour day provision of the Labor Law, § 3, applies to canal workmen, laborers and mechanics, and they are entitled to extra pay for emergency work done overtime.

Section 2 of Labor Law as to meaning of "employee" as a term also discussed and considered.

INQUIRY

Hon. William W. Wotherspoon, State Superintendent of Public Works, submitted an inquiry supplemental to one previously made by him in regard to certain canal employees having a right to be paid for overtime emergency work.

OPINION

In regard to a letter* written you by this department September 15, 1916, in which we expressed the view that workmen, laborers and mechanics upon the canals could be paid for emergency work performed overtime, it has been suggested that since the appropriation bill of this year has segregated all items and has appropriated a particular sum for each employee, the employees have been given positions, with compensation in the nature of a salary, and are therefore no longer laborers, workmen or mechanics to whom the eight-hour day provision of section 3 of the Labor Law applies. Emergency work overtime would under that view be included in their regular pay or salary, and they could not be allowed any additional compensation for such emergency work. The appropriation bill I have concluded after careful consideration has not effected such a result, and briefly for these reasons:

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* This letter reads as follows:

DEAR SIR.— I beg to inform you that no legal objection presents itself to my mind to your paying for overtime emergency work by workmen, laborers or mechanics, from the fund denoted "Repairs" at pages 370 and 371 of the Appropriation Bill (Chap. 646 of 1916). You will note that the Appropriation Bill after enumerating the different classes of repairs for which the moneys may be expended concludes with the phrase (and for) "other unforseen necessities." I believe this language is quite broad enough to permit the expenditure of money for emergency work in and about the canal structures.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

BY C. T. DAWES,
Deputy Attorney-General.

The appropriation bill of 1916 contains for example the following items in the appropriations for the Superintendent of Public Works:

Tug Amsterdam:

Captain, 8 months at $75	$600 00
Fireman, 8 months at $85	680 00
Deckhand, 8 months at $55	440 00

Section 3 of the Labor Law contains a provision that laborers, workmen or mechanics on all public works shall be paid the prevailing rates of wages in the vicinity. This provision is at once nullified when the Legislature appropriates a particular sum for the compensation of the employee. But although the prevailing rate of wages provision goes down, does not the eight-hour day limitation still survive, or in other words, has not the Legislature appropriated a particular sum for the employee for eight hours' service per day from that employee for the period stated? If such is the proper interpretation of the law, then, of course, the employee is entitled to compensation for overtime emergency work.

I find nothing in section 3 of the Labor Law which commands that the hours of labor provision and the prevailing rate of wages provision must always operate together and cannot operate separately; *i. e.*, there is nothing to indicate that because a laborer is paid a certain fixed compensation by the month or year, appropriated in that form by the Legislature, he is at once withdrawn from the operation of the eight-hour provision and may be compelled to work more than eight hours for that particular sum (which perchance may be less even than the prevailing rate of wages in the vicinity).

Now section 3 (Labor Law) provides: "Eight hours shall constitute a legal day's work for all classes of employees in this state except those engaged in farm and domestic service unless otherwise provided by law. This section does not prevent an agreement for overwork at an increased compensation except upon work by or for the state or a municipal corporation, or by contractors or subcontractors therewith."

"Employee" as defined in section 2, "means a mechanic, workingman or laborer who works for another for hire."

It is assumed without discussion that the captain, fireman and tughand on the department tug of the Superintendent of Public Works, are engaged upon *public work for the state*, and that they are *hired*. "To hire" means (Century Dictionary), "to engage the services of; employ for wages, a salary, or other consideration; as to hire laborers, a clerk, a teacher," etc.

We have no grounds for believing that the eight-hour law was enacted only for laborers, workmen and mechanics working for the State who are *hired by the day*, and was not intended to cover those who were *hired by the month or year.* You can *hire* a man as well for a month or a year as you can for a day, and if a contractor *doing public work* and hiring his workmen by the month or year must still observe the eight-hour law, the State itself when hiring its workmen directly *upon public work* falls within the scope of the same provision. The statute could not be intended to work any distinction in the application of the principle, the factor of "public work" appearing with equal force in both instances.

If we say the eight-hour provision is to apply to workmen hired from day to day at a prevailing rate of wages and not to workmen hired at a certain sum per week, month or year, we overlook the fundamental spirit of the eight-hour movement, and view it as a method of controlling wages and not as the exercise of the right of the State in the control of its own work to declare its belief in the eight-hour day as an economic proposition by forbidding any laborer to work for it more than eight hours in any one period of twenty-four. The statute expresses itself very clearly. It is not a question of wages at all. No matter what increased compensation might be offered for work in excess of eight hours, such excess work for the State is absolutely forbidden. "Eight hours shall constitute a legal day's work for all classes of employees in this state except those engaged in farm and domestic service unless otherwise provided by law. *This section does not prevent an agreement for overwork at an increased compensation except upon work by or for the state or a municipal corporation, or by contractors or subcontractors therewith.*"

We are justified, I think, in assuming that the Legislature of 1916 in passing the appropriation bill did not when merely fixing the amount of compensation of laborers, workmen and mechanics working directly for the State, intend to cast aside the eight-hour provision so many years a part of our law, leaving it still to apply to a laborer working for a contractor with the State and not to the fellow laborer at his side working directly for the State.

How a man is paid, whether at so much per day, at so much per month or so much per year, does have weight when taken in connection with the amount of manual labor he performs in determining whether he is in that class of common service termed "laborers, workmen or mechanics." But granted a man is a laborer, workman or mechanic because he actually engages in manual labor to such an extent that there is no doubt as to his classification as a laborer, could then a change in the amount of his pay or in the time of paying him remove him from that class? We must, I think, always apply the words "laborers, workmen or mechanics" as used in section 3 of the Labor Law in the sense they are ordinarily and commonly used in daily affairs. In such view the captain, fireman and tughand were laborers, workmen or mechanics prior to the appropriation bill of 1916 and still are. The eight-hour day applies to them, and for emergency service overtime they are entitled to receive additional compensation.

I am quite aware of certain decisions in the Appellate Division which present apparent obstacles to the conclusion above reached. In Farrell v. Board of Education, 113 App. Div. 405, the position of janitor in a public school in the Borough of Brooklyn was held not to be within the prevailing rate of wages provision of section 3 of the Labor Law. The court proceeds on the argument that the janitor was paid a "salary," $1,700 per year, and was "appointed" by the school board. Discussing section 3 of the Labor Law, the court remarks:. "Of course, as in discharge of such duties, he labors and works and employs mechanical skill, he may be said, as the doer, to be, in the broad sense of the terms, a laborer, a workman or a mechanic, for the first two words are generic, and sometimes, all other signs failing, have been regarded even as marking those who toil from those who are idle. But the language of the Labor Law (*supra*) indicates that it refers to those who are paid daily wages for labor upon public works, and that its purpose is to require that such wages shall equal the prevailing rate paid to other laborers, workmen or mechanics not engaged upon public works. * * * In State ex rel. Ives v. Martindale (47 Kan. 147) a somewhat similar statute was under review and the court held that a like expression did not embrace any officer or employee for whom an annual salary had been specifically named and appropriated by the Legislature. I think the principle is the same, notwithstanding the action in this case is by the local authorities, inasmuch as it is pursuant to the express sanction of the Legislature."

To the same effect is the holding in Bock v. City of New York, 31 Misc. Rep. 55, where a painter sued the city for the difference between the compensation he actually received from the city and the prevailing rate in the vicinity which he claimed should have been paid him. The court held that the painter was an appointee of the city at a fixed salary and was not entitled to any prevailing rate of wages.

Both the above cases are authority for the proposition that a man holding a yearly employment at a fixed salary is not within the intent of the prevailing rate of wages provision because he does not come into competition with other workmen of his class seeking daily or weekly employment. He has given up his right to earn the prevailing rate at days' wages in exchange for permanent employment which assures the income.

There is no quarrel with the above decisions. They are not authority against my conclusion, involving as they do *only* the prevailing rate of wages provision of section 3 and not the eight-hour provision.

People ex rel. Sweeney v. Sturgis, 78 App. Div. 460, does take up the eight-hour provision of section 3 and declares it not to be applicable to a uniformed member of the fire department of the city of New York: "It is obvious that the Legislature did not intend to include the uniformed members of the fire department within the act when in the definition of the 2d section it limited its application to a mechanic, workingman or laborer 'who works for another for hire.' The word 'hire' evidently does not relate to public officers or others holding positions under the city, who are included in the classified lists of the Civil Service Law, such as the uniformed members of the fire department who are appointed to position after rigid examination and from competitive lists. No contract of hiring is made with them. They receive annual salaries, not wages, neither in the common or legal acceptation of the term. Under section 737 of the charter they receive a 'warrant of appointment signed by the fire commissioner.' Under section 738 they take an oath of office. Under section 736 they are also exempt from jury duty and from arrest on civil process and while on duty from service of subpoenas from civil courts. Under other sections they are graded in rank, receive salaries according to such rank and become entitled to pensions under certain conditions. These rights and privileges clearly differentiate them from laborers working for hire."

The result arrived at in the above case was undoubtedly correct but might have been reached on the single broad ground that "firemen" just the same as policemen are not *ordinarily* regarded by the public as laborers, workmen or mechanics.

This rule for interpretation is the safer one and is the one employed by the court more recently, in the case of People v. Interborough Rapid Transit Co., 169 App. Div. 32, wherein construing section 2 of the Labor Law which defines "employee" to mean "a mechanic, workingman or laborer who works for another for hire," the court said: "Each statute must necessarily be largely a law unto itself, and its proper interpretation must depend upon its own particular language. The statutory definition, which we have here to guide us, prevents any peculiar force being attached to the terms 'wages' and 'employee', *and confines us to the simple inquiry whether, among the persons enumerated in the submission, there are any who are properly to be classed as mechanics, workingmen or laborers, as those terms are ordinarily and naturally used.*"

In the Interborough case a stenographer, accountant, typist, chainman, levelman, civil engineer, bookkeeper, draftsman, structural designer, a clerk and a rodman were held not to be laborers, workingmen or mechanics. A blue-printer, office boy, matron, telephone switchboard operator and a chauffeur were held to fall within the class of laborers, workmen or mechanics. The conclusions were reached by the court as to the latter positions despite the fact that the individuals were paid by the month or year — which is the application of the point I have attempted to make in this memorandum, namely, that the fact that the Legislature appropriated a certain amount per month or year for the captain, fireman and tughand of the Superintendent's boat, does not have any bearing upon whether those men are laborers, workmen or mechanics. *The nature of their duties* is the only test.

There is one further observation. The Legislature did not in my opinion by drafting the appropriation bill in its present form purpose to create offices or positions with salary attached for every laborer, workman or mechanic employed by the State. The form of the bill was designed merely to disclose the moneys which were being paid to officers and employes. If positions with salaries have been created, every appropriation (and there are many of them in the appropriation bill) for "laborer, common, 313 days at $2.00...... $626.00" creates a position with annual salary attached, and takes the common laborer, along with every other employee of the State, out of the operation of the eight-hour day provision.

It is my best judgment that the captain, fireman and tughand referred to in the letter of the Superintendent of Public Works are notwithstanding the form of the appropriation bill of 1916, still workmen, laborers and mechanics entitled to an eight-hour day, and for services in emergencies beyond eight hours are entitled to additional compensation, which is available in the fund appropriated for "unforeseen necessities" under the heading "repairs" at page 370 of the appropriation bill.

E. E. WOODBURY,
Attorney-General.

DAY OF REST LAW (§ 8-a)

Does Not Apply to Railroad Power Plant not Serving Repair Shop Exclusively

September 15, 1916.

STATE INDUSTRIAL COMMISSION, *Albany*, N. Y.

GENTLEMEN.—Your letter of September 1st acquaints me with a controversy over the interpretation of the Labor Law, between your office and the attorneys for the New York Central Railroad Company with respect to the one day of rest in seven statute as applicable or not applicable to a power plant operated by the railroad at West Albany. The statutes as you know provide that:

> Every employer of labor engaged in carrying on any factory or mercantile establishment in this state shall allow every person, except those specified in subdivision two, and as otherwise herein provided, employed in such factory or mercantile establishment at least twenty-four consecutive hours of rest in every calendar week. (Sec. 8-a, Labor Law.)

A factory is defined as follows:

> The term 'factory,' when used in this chapter, shall be construed to include any mill, workshop or other manufacturing or business establishment and all buildings, sheds, structures or other places used for or in connection therewith, where one or more persons are employed at labor, except dry dock plants engaged in making repairs to ships, and except power houses, generating plants, barns, storage houses, sheds and other structures owned or operated by a public service corporation, other than construction or repair shops, subject to the jurisdiction of the public service commission under the public service commissions law." (Sec. 2, Labor Law.)

If the power plant was used exclusively to furnish power or light to the repair shops, the law would consider it a part of the repair shop (opinions Attorney-General 1915 p. 122). However, it appears that this power plant lights not only the shops, but the yards, which, as you know, are extensive, the coaling station, and, in cases of emergency, the passenger station at Albany. It also performs other functions, furnishing, as indicated upon the blue print, compressed air for charging and testing the air brakes equipment on all trains made up in the West Albany yard, and also compressed air for engine house when the local plant fails for any reason. It also pumps all water for the engine house, for the locomotives and for fire service to hydrants, thus taking a very active part in actual train operations.

The plant is therefore "a structure owned or operated by a public service corporation" in immediate connection with the public service function the corporation renders, and not operated exclusively "for or in connection with" their (factory) repair shop. Such a plant is I believe excepted from the operation of section 8-a of the Labor Law.

I return you the blue print furnished by Visscher, Whalen & Austin.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By C. T. DAWES,
Deputy Attorney-General.

CERTIFICATION OF STATE INDUSTRIAL COMMISSION'S RECORDS (§ 40)

The Secretary May Delegate His Signature to a Subordinate

October 14, 1916.

HENRY D. SAYER, ESQ., *Secretary, State Industrial Commission, 230 Fifth Avenue, New York City.*

DEAR SIR.— I have received your letter of October 6th with reference to the certification of the records of your office relating to the construction, alteration of and exits from buildings in the city of New York for the purpose of transfer to the Fire Commissioner of that city.

Your first question is whether signing the secretary's name by an assistant secretary constitutes, when accompanied by the seal of the Commission, a valid certification.

I have examined the opinions rendered to your department by Mr. Bonynge, Counsel to your Commission, and I agree with his conclusion that if one of your assistant secretaries signs your name to such a certificate and you adopt it as your signature, or if it was a procedure authorized by the Commission, it is sufficient and constitutes a proper certification. Mr. Bonynge has cited to you the definition of "signature" as found in the General Construction Law, § 46. The definition of the term signature as found in the Century Dictionary is likewise of value. It is as follows:

> The name of a person or something used as representing his name, affixed or appended to a writing or the like, either by himself or by deputy, as a verification, authentication or assent.

In the case of People v. Bank of North America, 75 N. Y. 547, it was held that the rule that an agent, public or private, cannot delegate his authority in cases requiring the exercise of judgment or discretion, cannot apply to prevent the State Treasurer from delegating to a clerk in his office authority to endorse his name to drafts, since this involves no such exercise of judgment or discretion.

The matter becomes a question whether the act is one that can be delegated, and if so, whether authority to sign was granted to the agent. The certificates in question were not documents which the law required to be signed in any particular way. Section 18 of chapter 503 of the Laws of 1916, provides as follows:

> The department of labor shall transfer to the fire commissioner certified copies of all records in its office relating to the construction, alteration of and exits from buildings in the city of New York.

Laws of 1915, chapter 674, sections 3–7, abolished the office of Commissioner of Labor and provided that reference in any law or rule to the "Department of Labor" shall be deemed to mean the Industrial Commission.

The act required to be done by section 18 of chapter 503, Laws of 1916, by the "Department of Labor" must therefore be deemed to be required of the Industrial Commission. It is not an act requiring the exercise of judgment or discretion, but a purely ministerial act which can be delegated. The Industrial Commission can delegate to its secretary the right to sign its name or to the assistant secretary the right to sign the secretary's name.

In the case of Gibson v. National Park Bank of New York, 49 Sup. Ct. (17 J. & S.) 429; affd. 98 N. Y. 87, it was held that authority to do acts merely ministerial or mechanical may be delegated, and accordingly the sheriff may delegate to an assistant the power to certify a copy of a warrant of attachment and make a notice thereof as required by the Code of Civil Procedure, and it was further held in that case that where the names of the sheriff and the deputy were in fact signed by a clerk to the deputy by his direction, he having adopted the act of his clerk in signing the process, it was to all intent and purposes the act of the deputy.

The proposition in question seems then to narrow down to one of authority to act, a question whether these assistant secretaries were empowered to sign the name of the secretary to the certificates in question. I have no doubt from your letter that this authority was granted.

It has been held that the seal of a corporation affixed to a deed or contract is of itself prima facie evidence that it was so affixed by authority of the corporation (Lovett v. Steam Sawmill Association, 6 Page 54; Whitney v. Union Trust Co., 65 N. Y. 76). I have no doubt this principle would apply to the affixing of the seal of this Commission.

I believe the Commission has properly performed its duty, that the certificate is a valid one and that the burden at any rate to disprove the authenticity of the signature and execution of the certificate rests upon any person who desires to contest it.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By H. J. HINMAN,
Deputy Attorney-General.

POWERS OF THE STATE INDUSTRIAL COMMISSION (§§ 43, 51-a)

(a) The Commission is not Charged with the Duty of Protecting the General Public

April 21, 1916.

HON. JOHN MITCHELL, *State Industrial Commissioner, 230 Fifth Avenue, New York City.*

MY DEAR COMMISSIONER.— Ever since the abolishment of the Fire Marshal's Department, certain powers and duties previously exercised by the Fire Marshal then being conferred on the State Department of Labor, we have received complaints, some of them coming to us directly and others being sent through the Executive Chamber, as to conditions obtaining in moving picture theaters in cities, towns and villages in which there are no adequate supervising authority or building departments. We have always treated these complaints as without our jurisdiction, and have so informed the complainants.

Now I am informed that there seems to be the impression in the Attorney-General's office that under section 51-a, the Commission has such broad powers that it may regulate any industry aside from factories and mercantile establishments, in which hazards may be present or inherent. If this contention is true then the Industrial Commission has before it a tremendous task, and one that of course it is not adequately officered to undertake, but it is of so much importance that it seems to me the question of the Commission's duties and obligations should be definitely determined.

In nearly every instance in which complaint was made in regard to moving picture theaters in the smaller communities, the conditions are extremely hazardous. The halls on second, third and fourth floors, ramshackle buildings, inadequate exit facilities, no preparation for panic or fire, and many other physical characteristics make of these places of assemblage, menaces in the very extreme. But aside from moving picture theaters there are of course other industries not classed as factories and mercantile establishments that might require attention of the Commission, and conceivably this might take in employees on elevated, surface and subway transportation lines, not now definitely covered by the law, such as ticket sellers, ticket choppers, guards, and others.

May I suggest that this matter be brought to the attention of the Commission, or prior thereto referred to Counsel, and if he so advises then to the Attorney-General for opinion as to the extent of the powers and duties of the Commission under section 51-a.

Sincerely,
JAMES M. LYNCH,
Commissioner.

April 24, 1916.

HON. JOHN MITCHELL, *Chairman, State Industrial Commission.*

DEAR MR. CHAIRMAN.— I am in receipt of your communication of April 24th enclosing copy of letter to you from Commissioner Lynch.

I have carefully examined the provisions of section 51-a of the Labor Law in connection with the questions submitted by Commissioner Lynch. The said section contains six subdivisions.

The first subdivision confers upon the Commission power to make rules and regulations for carrying into effect the provisions of the chapter and gives to the Commission power to make such rules and regulations for the safety of factories in addition to the statutory requirements as they may deem necessary or advisable.

The second subdivision gives to the Commission power to make, amend and repeal rules and regulations for proper sanitation "*in all places to which this chapter applies,*" and for guarding against and minimizing fire hazards, personal injuries and diseases "*in all places to which this chapter applies*" with respect to certain matters specifically referred to in said subdivision. The words "in all places to which this chapter applies" found in said subdivision, in my opinion, limit the power of the Commission under this subdivision, to factories and mercantile establishments which are the places referred to in the chapter.

The third subdivision confers upon the Commission, whenever it finds that any industry, trade, occupation or process involves such element of danger to the lives, health or safety "of persons employed therein" as to require special regulation for the protection "of such persons," to make special rules and regulations to guard against such elements of danger by establishing requirements as to temperature, humidity, the removal of dust, gases or fumes, and requiring licenses to be applied for and issued by the Commission as a condition precedent to the carrying on of any such industry, trade, occupation or process, and it further provides that such rules may require medical inspection and supervision "of persons employed and applying for employment." Under this subdivision, I am of the opinion that the Commission has power, and it is its duty whenever it finds that any industry, trade, occupation or process involves any of the dangers to employees referred to in said section, to make such rules on the subject mentioned as may be necessary to guard such employees against the dangers referred to in the section; or the Commission may under such circumstances require licenses to be applied for as a condition for carrying on any such industry, trade, occupation or process. This subdivision is not limited in any way to any particular place where such industry, trade, occupation or process may be carried on. The power of the Commission to make rules under the conditions mentioned in the section is general, applying to any place where the industry, trade, occupation or process is being conducted. The Commission, however, is limited by the language of the subdivision to the making of such rules as will guard the "employees" against the dangers mentioned in the subdivision and is not in my opinion, charged with the duty under this subdivision, of making rules for the protection of the general public against the dangers referred to in the section. The entire act relates only to the protection of employees and in a few instances, to such protection as may be incidentally given thereby to those frequenting places where the employees are engaged.

The fourth subdivision gives to the Commission power to limit its rules and regulations to certain classes of establishments, places of employment, etc., or authorizes the Commission to apply such rules only to such places as may be constructed or established in the future.

The fifth subdivision gives to the rules and regulations of the Commission the force and effect of law.

The sixth subdivision provides that "no provision of the chapter conferring power upon the Commission to make rules and regulations shall limit the power conferred by the section."

Construing the entire section, it is my opinion that the Commission has the broad general power under this section, whenever it finds that any industry, trade, occupation or process involves any of the dangers mentioned in the act, and regardless of whether the trade or occupation is being carried on in a factory or mercantile establishment, to make rules and regulations for the safeguarding of the employees against the dangers and hazards mentioned in the act, but that the Commission is not charged under this section with the duty of making rules and regulations for the protection of the general public against such dangers or hazards.

Section 83-a of the Labor Law contains provisions requiring fire alarm systems and fire drills in certain factory buildings. As a part of subdivision 2 of section 83-a, it is provided that in the city of New York the Fire Commissioner of such city, and elsewhere the Industrial Board, shall make rules, regulations and special orders "necessary or suitable to each situation," and in the case of buildings containing more than one tenant "necessary or suitable to the adequate cooperation of all the tenants of such building in a fire-drill of all the occupants thereof." While the language of this portion of the section above referred to does not specifically refer to factory buildings it is my opinion that a proper construction of the language requires that it should be limited to factory buildings. The section deals only with factory building requirements, and the use of the word "buildings" in the portion of the section referred to, should in my opinion, be limited by the preceding portions of the section to "factory buildings."

In construing sections of the Labor Law, I think it should always be borne in mind that the Legislature was dealing with the subject of safeguarding the employees, and was not dealing with the general subject of protecting the public against fire or other hazards. Bearing this fact in mind, I do not think any fair interpretation of any of the sections of the Labor Law would give to the Commission power to make rules and regulations designing to guard against fire and other hazards in theaters, office buildings, hotels or similar places. The Commission, however, would have the power even in theaters or in hotels, to make such rules and regulations as are necessary to safeguard employees if they found in accordance with the provisions of section 51-a, that any trade or occupation carried on in such places involved any of the dangers to "employees" mentioned in said section.

Trusting that this will be found to answer the questions submitted by Commissioner Lynch, I am,

Yours very truly,
ROBT. W. BONYNGE,
Counsel to the Commission.

April 25, 1916.

HON. EGBURT E. WOODBURY, *Attorney-General, Albany, N. Y.*

DEAR SIR.—At the instance of the State Industrial Commission, I request an opinion as to the duties of this Commission relative to the inspection of moving picture shows in cities, towns and villages in which there are no adequate supervising authority or building departments.

It is the opinion of our Counsel that this Commission has no jurisdiction in such cases under section 51-a of the Labor Law, but inasmuch as some intimation has been given us that your office may entertain a different opinion, we are asking that you have the matter definitely looked up and an authoritative opinion furnished us. Of course, if we have any duty in the matter we wish to perform it and as it will be a rather laborious task we should desire to address ourselves to it as speedily as possible.

For the purpose of giving you the exact situation, as well as the views of our Counsel, I am enclosing herewith copy of a letter from Commissioner Lynch, who is in charge of the Inspection Department, and also from Mr. Bonynge, our Counsel.

Hoping to hear from you at your earliest convenience, I am,

Yours very truly,
EDWARD P. LYON,
Commissioner.

May 20, 1916.

HON. EDWARD P. LYON, *State Industrial Commission, 230 Fifth Avenue, New York City.*

DEAR SIR.— I received your letter of April 25th relative to the inspection of moving picture shows by the State Industrial Commission and enclosing copy of opinion of Mr. Bonynge, counsel to the Commission, and copy of letter to the Commission signed by Mr. Lynch. I have carefully considered the statute together with such opinion and letter, and I am convinced that your counsel has properly concluded in this matter.

When the office of fire marshal was abandoned, it is clear that it was not the intention to transfer all of his duties to the Commissioner of Labor, now the State Industrial Commission. One of the objections to the fire marshal statute was that it overlapped the jurisdiction of the Department of Labor so far as factories and mercantile establishments were concerned, and the provisions in the Labor Law were clearly intended to be confined to the protection of workmen and employees, and not the general public. Another objection to the fire marshal statute was that it overlapped the jurisdiction of the local authorities, which, through the Commissioners of Public Safety and Department of Public Buildings, and other local officers throughout the State have full power to safeguard the general public. I therefore fully agree with the opinion of Mr. Bonynge.

Very truly yours,
E. E. WOODBURY.
Attorney-General.

By H. J. HINMAN,
Deputy Attorney-General.

(b) L. 1916, ch. 503, Transfers to the New York City Authorities Only Such Jurisdiction Over Buildings as Relates to Construction, Alteration, Plumbing, Drainage, Elevators, Fire Escapes, Exits or Fire Alarm Systems

May 31, 1916.

MR. HENRY D. SAYER, *Secretary of the State Industrial Commission, 230 Fifth Avenue, New York City.*

DEAR SIR.— I have examined with care your letter of May 25th in relation to the situation presented in New York City by reason of the enactment of chapter 503 of the Laws of 1916, conferring certain of the powers and duties of the Industrial Commission upon the city government of that city. You request my opinion as to scope and intent of the words "use and occupancy" as used in subdivision 6 of section 774 of the charter as added by chapter 503 of the Laws of 1916.

The labor laws cover many things relating to the "use and occupancy" of buildings if we use that term in its broad sense such as the safeguarding of machinery other than those safeguards which become parts of the structure of the building itself, the control of temperature conditions and the exhaustion of dangerous gases, fumes and dust and other things which relate to the safeguarding of the safety, life and welfare of factory workers as distinguished from the safety, life and welfare of the general public. In other words, it has been recognized as the distinctive duty of the State Industrial Commission to carry out the provisions of the law which has been enacted for the benefit of the working men.

Heretofore these duties have included certain duties relating to structural matters such as the means and adequacy of exit in case of fire and the construction, alteration or structural changes in the plumbing and drainage of factory buildings including factory buildings in the city of New York. In view of the difficulties of divided authority in the city of New York in relation to the construction of buildings in such city, it has evidently been deemed wise to provide one central authority in the city of New York for that purpose and it is apparent from a careful reading of the entire bill (chapter 503 of the Laws of 1916) that the jurisdiction conferred upon the local authorities relates entirely to the construction of or structural changes in buildings and the control conferred upon the local authorities does not relate to the use and occupancy of the building after it has been constructed or altered unless the single phrase "use and occupancy of buildings" in subdivision 6 of section 774 is to be construed to confer all of the powers of the labor department of the State upon the fire commissioner of the city. There is nothing in the balance of the act tending to confirm any such interpretation and the entire statute must be considered in ascertaining the intent under that rule of construction that the general intent of a statue is the key to the meaning of its parts. That is, the intention of the whole act will control the interpretation of the parts. The literal sense of the term "use and occupancy of buildings" is not controlling but must be restricted to carry out the evident intent of the act.

Chapter 503 of the Laws of 1916 is a special statute transferring certain powers of the State department constituted to carry out the provisions of a general law. It should therefore be strictly construed rather than liberally construed in so far as it repeals the provisions of the general law. Throughout chapter 503, there is a specific enumeration of objects or things to be accomplished by the local authorities and under the rule of ejusdem generis, the use of the expression "use and occupancy of buildings" should be held to include only such objects or things as are of the same kind as those specifically enumerated. It is especially to be noted that a new section 411-a is added to the charter of New York City which relates to a certificate of use and occupancy of new and altered buildings. This new section has been added at the same time that subdivision 6 is added to section 774 giving to the fire commissioner the power to enforce all laws and ordinances and the rules and regulations of the board of standards and appeals in respect of "* * * 6. The use and occupancy of buildings and other structures, except tenement houses." These two sections should be read together rather than to read the provisions of section 774 in connection with all of the provisions of the labor laws of the State in relation to safeguarding the safety, life and welfare of persons employed in factory buildings in general.

It is also to be noted that the board of standards and appeals created by said act has been given power to make rules and regulations only "regarding the enforcement of *those* provisions of the Labor Law and other laws which relate to the *construction, alteration, structural changes in, plumbing and drainage of, elevators, fire escapes on, adequacy and means of exit from and fire alarm systems in all buildings*, except tenement houses, within the city of New York." This tends to confirm my interpretation of the term "use and occupancy" in that such board is given only limited powers relating to the structural features of the buildings themselves rather than the welfare of those occupying the buildings.

Moreover section 18 of the act provides for the transfer by the Department of Labor to the fire commissioner of certified copies of all records in its office relating to the "construction, alteration of and exits from buildings in the city of New York." There is no provision made for the transfer of records in relation to any of the other matters covered by the labor laws of the State or by the rules and regulations of the Industrial Commission. This also confirms my opinion that it was not the intent of the Legislature to deprive the State Industrial Commission of the exercise of all of its powers within the city of New York. If that had been intended, it would have been a simple matter for the Legislature to have made clear such an intention. On the contrary, in section 774 it is expressly provided that such department of labor "shall not exercise any of *such* powers in the city of New York." The word "such" is a word of limited meaning and it was clearly intended that some power should be exercised by the Department of Labor within the city of New York. It is therefore my opinion that the words "use and occupancy of buildings" as used in subdivision 6 of section 774 must be confined in its meaning to the carrying out of the other provisions of chapter 503 of the Laws of 1916 and not as including such provisions of the labor laws as do not relate to the construction of buildings or the alteration of buildings or structural changes in buildings or the plumbing or drainage of buildings or elevators in buildings or fire escapes on buildings or the adequacy and means of exit from buildings or fire alarm systems in buildings.

It would be a difficult matter and would perhaps uselessly encumber this letter for me to review the provisions of the labor laws which would remain within the jurisdiction of the Department of Labor and I shall not endeavor to do so. I believe that it will not be difficult for you to interpret the provisions of these laws in the light of this opinion and determine for yourselves the jurisdiction which remains in your department. If you find difficulty as occasion arises, I will be pleased to assist you with further advice.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By H. J. HINMAN, *Deputy Attorney-General.*

(c) L. 1913, ch. 503, Transfers to the New York City Authorities Power to Construe Such Provisions of the Labor Law as they have Jurisdiction to Enforce

August 8, 1916.

STATE INDUSTRIAL COMMISSION, *230 Fifth Avenue, New York City.*

GENTLEMEN.— Your letter of August 5th asks whether the Board of Standards and Appeals recently provided for in the New York charter, must follow an interpretation of the Labor Law made by the Industrial Commission rather than an interpretation which the Board itself should make. I believe the Board of Standards and Appeals may follow its own interpretation. Section 411 of the Greater New York Charter, as amended by chapter 503 of the laws of 1916, provides that an interpretation of the spirit of the law, though a variation from the letter, may be made by a superintendent, except that he cannot proceed contrary to a determination of the Board of Standards and Appeals. And again in section 719, paragraph 5, the Board of Appeals may interpret the spirit of the law.

The Board of Standards and Appeals has jurisdiction (section 718-a) to "make, amend and repeal rules and regulations for carrying into effect the provisions of the laws . . . jurisdiction whereof is conferred upon the board by this act or upon a superintendent of buildings." The Board has power also to "make, amend and repeal rules and regulations regarding the enforcement of those provisions of the labor law" which relate to the construction of buildings within the city of New York. All rules and regulations made by the Board supersede those of the Labor Department; and the Board has exclusive jurisdiction with respect to buildings in the city of New York in those matters which the Industrial Commission formerly had jurisdiction over by chapter 719 of the Laws of 1915.

From a consideration of all the above provisions I cannot but conclude that the Board of Standards and Appeals may itself construe *those sections of the Labor Law* which it has the power and duty to enforce within the city of New York, and the said Board is not bound by any interpretation of those sections made by the State Industrial Commission.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By C. T. DAWES, *Deputy Attorney-General.*

FACTORY ELEVATORS AND HOISTWAYS (§ 79)

Borough Superintendents of Buildings of New York City Have Jurisdiction Within Borough Limits

October 6, 1916.

STATE INDUSTRIAL COMMISSION, *230 Fifth Ave., New York City.*

GENTLEMEN.—Answering your letter of October 5th our opinion is that the Industrial Commission has lost jurisdiction over the construction of elevators in buildings within New York City. Section 718-a, subdivision 3 of chapter 503 of the Laws of 1916, to which you direct our attention, confers power upon the Board of Standards and Appeals to make rules with regard to the enforcement of provisions of the Labor Law which relate to elevators, and while the jurisdiction of the Superintendent of Buildings is not couched in quite as specific language I believe the intent was to confer upon him power to enforce the rules and regulations which were made by the Board of Standards and Appeals.

§ 406. Each superintendent of buildings except as otherwise provided in this act, shall, within the borough in which he has jurisdiction, have exclusive jurisdiction, and charge, *subject to and in accordance with the general rules and regulations to be established by the board of standards and appeals*, of the construction, alteration, structural changes in and removal of buildings and other structures erected or to be erected within such borough, including sidewalk elevators, vaults, the coverings thereof and entrances thereto.

§ 411. Each superintendent of buildings shall have power and it shall be his duty, subject to the provisions of law and the ordinances of the board of aldermen, *and the general rules and regulations established according to law* to pass upon any question relative to the mode, manner of construction or materials to be used in the erection or alteration of any building or other structure erected or to be erected within the borough under his jurisdiction * *.

Furthermore I think the superintendent's jurisdiction over the "construction, alteration, structural changes in and removal of" buildings is broad enough to cover the construction of an elevator within a building. Sidewalk elevators and vaults were specifically mentioned only because they were structures outside of buildings.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By C. T. DAWES,
Deputy Attorney-General.

FACTORY EXITS AND EXIT SIGNS (§ 79-c)

The Fire Commissioner of New York City Has Exclusive Jurisdiction Within the City's Limits

October 6, 1916.

STATE INDUSTRIAL COMMISSION, *230 Fifth Ave., New York City.*

GENTLEMEN.—We are in receipt of your letter of October 5th relative to the jurisdiction over exit signs and exit lights in buildings in New York City. If the jurisdiction of the Fire Commissioners is not contained in subdivision 4, section 774 of chapter 503 (1916) it undoubtedly is found in subdivision 1 of that section.

> "The commissioner is empowered to enforce all laws * * * in respect of the prevention of * * * *danger to* and *loss* of life" from fires.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By C. T. DAWES,
Deputy Attorney-General.

FACTORY VENTILATION (§ 86)

The State Industrial Commission Has Exclusive Jurisdiction in New York City

November 21, 1916.

STATE INDUSTRIAL COMMISSION, *230 Fifth Ave., New York City.*

GENTLEMEN.— Replying to your letter of November 13, 1916, it would seem to us that section 86 of the Labor Law has removed all jurisdiction (insofar as the health of employees is concerned) over the removal of gases and fumes in factories in New York City, from the New York City Health Department and conferred it exclusively upon the State Labor Department. The City Health Department would still have jurisdiction to order the reconstruction of apparatus and machinery if the fumes were a nuisance to the outside public.

However in view of the seriousness of a possible conflict of powers, I do not feel that I can advise you definitely until I am in possession of all the circumstances in the case to which you refer, including copies of the orders of the State Health Department and the Department of Labor.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By C. T. DAWES,
Deputy Attorney-General.

INSPECTION OF FACTORY BOILERS (§ 91)

The Section Does Not Apply to Boilers Used in Agricultural Schools

THE NEW YORK STATE SCHOOL OF AGRICULTURE
at Morrisville, N. Y.

May 2, 1916.

HON. E. E. WOODBURY, *Attorney-General, Albany, N. Y.*

DEAR SIR.— This institution has two high pressure boilers in its dairy laboratories, both installed by specifications of the State Architect, and inspected when installed by his inspector. The question has just come up as to whether these boilers come under the ruling of section 91, chapter 347, Laws of 1915, and if so if this institution should pay for the inspection as provided thereby.

This is a matter which is to come up this coming Friday, May 5th, and I trust that it will be possible for me to receive your advice in this matter before that date.

Thanking you for your courtesy, I am

Yours very truly,
F. G. HELYAR,
Director.

May 3, 1916.

F. G. HELYAR, ESQ., *Director, New York State School of Agriculture, Morrisville, N. Y.*

DEAR SIR.— This is in acknowledgment of your favor of the 2d inst., and in reply I beg to state that you do not state in your letter whether you manufacture anything at your school or not, and it is quite important to know that before a definite reply can be made, but if the boilers are only used for experimental purposes in connection with laboratory work (which I presume is the fact) the boilers would not come within the provisions of section 91, chapter 347, of the Laws of 1915; on the other hand, if they are used for the manufacture of dairy products or otherwise, perhaps they will require such inspection, and if inspection is required, the institution should pay for it, as provided in such section.

I do not think the act was intended to apply to boilers used in an agricultural school, but if you are manufacturing anything by the use of the boilers in your institution, probably the only safe course would be to have them inspected.

Section 2 of the Labor Law reads in part as follows:

> The term 'factory', when used in this chapter, shall be construed to include any mill, workshop, or other manufacturing or business establishment and *all buildings*, sheds, structures or other places used for or in connection therewith, where one or more persons are employed at labor, except dry dock plants engaged in making repairs to ships, and except power houses, generating plants, barns, storage houses, sheds and other structures owned or operated by a public service corporation, other than construction or repair shops, subject to the jurisdiction of the public service commission under the public service commissions law. Work shall be deemed to be done *for a factory* within the meaning of this chapter whenever it is done at any place, upon the work of a factory or upon any of the materials entering into the product of the factory, whether under contract or arrangement with any person in charge of or connected with such factory directly or indirectly through the instrumentality of one or more contractors or other third persons.

By applying the foregoing definition to the conditions as they exist in your school, I think you will have no trouble in arriving at a right conclusion, as to whether section 91 applies to your boilers or not. However, after reading this letter, if you desire further advice, and you will fully explain to me just what products you are manufacturing, I will be pleased to write you again.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By G. A. FISHER, *Third Deputy Attorney-General.*

THE NEW YORK STATE SCHOOL OF AGRICULTURE
at Morrisville, N. Y.
F. G. HELYAR, *Director*

May 8, 1916.

HON. E. E. WOODBURY, *Attorney-General, Albany, N. Y.*

DEAR SIR.—Referring to yours of May 3d with reference to boiler inspection would say that this school is not in the manufacturing business. We are in the educational business. Our boilers are used as follows: The one in Bicknell Hall is used to make steam to drive the turbine Babcock milk testers by which the students learn to determine the amount of fat in milk. It is also used to drive a small engine which operates a churn, which is used to churn our cream in the dairy classes learning how to make butter. The boiler in the dairy barn is used to drive a turbine separator, the pasteurizer, a steam pump, to heat water for washing, and to turn a sterilizer, all of which operations are a part of the educational work of the institution in teaching dairying to our students.

There are times during the year when our students are not here, and at that time the regular force who are connected with the dairy work of the institution, operate this steam machinery to take care of the milk and cream which is being produced by the dairy herd.

This explains fully, I believe, the relation of the institution to the point which you make concerning the matter of manufacture. It is manufacture, but as an educational matter rather than a commercial one. I would not bother you with this again except that I want to be absolutely sure that whatever we do is done right.

Yours very truly,
F. G. HELYAR,
Director.

May 9, 1916.

HON. F. G. HELYAR, *Director, Morrisville, New York.*

DEAR SIR.—I am in receipt of your second favor under date of May 8th, and note what you say about the use which is made of your boilers in your school, and I do not think you come within the provisions of section 91, chapter 347, Laws of 1915, and do not think that you are required to have the boilers in your school inspected as therein required.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By G. A. FISHER,
Third Deputy Attorney-General.

IMMIGRANT LODGING PLACES (§ 156)

Proceeds of Suit on Bond are Payable to Victims of Fraud, Deceit, etc.

May 3, 1916.

MILES M. O'BRIEN, JR., *Asst. Counsel, State Industrial Commission, 230 Fifth Avenue, New York City.*

DEAR SIR.— I have received your letter of April 26th in which you request my opinion with reference to the disposition of proceeds recovered in a suit brought upon a bond of a licensee to run an immigrant lodging house. Specifically, you desire to know whether if suit is brought upon the bond of one Hantavi, of Buffalo, who has disappeared suddenly, leaving obligations to an employee in the lodging house for wages and money loaned and also obligations to one of his boarders, the money recovered on the bond is to go to the State or to the persons who have been the victims of any fraud, deceit, etc., practised by such licensee.

While the bond runs to the People of the State of New York, this is the customary form for all bonds of this character, and it is my opinion that section 156 of the Labor Law which provides that "any person aggrieved may bring an action for the enforcement of such bond in any court of competent jurisdiction" gives authority which cannot be doubted to the person intended to be benefited by the bond to obtain the benefits thereof. I therefore believe that the proceeds recovered in any such suit are clearly payable to the persons who have been the victims of any fraud or deceit or are otherwise covered by the conditions of the bond.

You further ask whether or not a person working for a licensee is entitled to any part of the money recovered on a bond. I have no doubt that the statute is broad enough to cover such a person.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By H. J. HINMAN,
Deputy Attorney-General.

PURCHASE OF CONVICT-MADE ARTICLES BY THE STATE AND ITS POLITICAL SUBDIVISIONS (PRISON LAW, § 182)

A School Board Has No Choice But to Take Goods Offered

SOUTH DAYTON, N. Y., *April* 15, 1916.

HON. EGBURT E. WOODBURY, *Attorney-General.*

DEAR SIR.— In the matter of the purchase of school seats for our new school building, I am referred to a decision of the Attorney-General of May 25, 1911, by the State Prison Commission.

Now our proposition is this: we are about to seat a new fire proof building and are desirous of placing therein up to date furniture; we submitted to the Prison Commission a style of seat the board of the school would approve of, that is a solid pedestal desk and seat, to get rid of the annoyance of legs and things in the way of sweeping, and a style which the prison does not manufacture or anything similar to take its place, and asked them to give us a certificate to purchase in the open market, this they decline to do, and submit a style of prison manufacture with pedestal seat but the desk has four supports touching the floor, and evidently a very incommodious affair.

Now what we are up against is this: while our board recognizes the right of the prison officials to fix styles, designs, patterns, prices, etc., of goods to be manufactured, and for public institutions to be supplied therefrom. Is the Attorney-General's office committed to this proposition, is our school board compelled to take something they do not want and approve from prison manufacture, when the State does not manufacture what they do want and approve?

As I understand, section 182 of the Prison Law, provision is made if the State does not manufacture and cannot furnish the requisition of the public institution, for a certificate setting forth the fact from the Commission. Are we to understand that that certificate is discretionary with the prison board? and that they have the arbitrary power to pass upon the style, quality, patterns and prices of all goods used in public institutions?

We are drawing near a time when it will be necessary for our school board to settle on something for seating, and are very desirous that your office should give us an opinion on the matter at an early date.

Respectfully yours,
W. D. PHELPS,
Secretary, Board.

April 21, 1916.

MR. W. D. PHELPS, *Secretary School Board, South Dayton, N. Y.*

DEAR SIR.—The Prison Department has asked me to render an opinion on the question contained in your letter of April 15th.

First of all, there is an administrative question concerned and with that I have nothing to do. The Prison Department has evidently determined that it has manufactured desks proper for your school building. Assuming this to be the fact your free school has no choice in the matter, but to take the goods from the Prison Department, for so the statute provides, and I cannot alter it even though you are convinced that an injustice may be done you. Your appeal must lie to the Legislature.

I am not in any position to go behind the determination of the Prison Commission that they have the proper goods.

Very truly yours,
E. E. WOODBURY,
Attorney-General.

By E. G. GRIFFIN,
Deputy Attorney-General.

WORKMEN'S COMPENSATION LAW

(a) The Workmen's Compensation Law Applies to Public Employees Engaged in Hazardous Employments Not Pursued for Pecuniary Gain; the State and Its Municipalities May Be Self-Insurers (§ 2, gr. 43)

July 3, 1916.

STATE COMMISSION OF HIGHWAYS ET AL.

The Workmen's Compensation Law as amended by chapter 622 of the Laws of 1916, is applicable to the employees of the State or a municipal corporation or other subdivision thereof wherever such employees are engaged in any of the hazardous employments classified in section 2 of the law, notwithstanding the definition of the term "employment" in subdivision 5 of section 3 of the law which restricts such term to a "trade, business or occupation carried on by the employer for pecuniary gain."

Since group 13 of section 2 of the act covers employees engaged in "paving; road building, curb and sidewalk construction or repair; * * *," it is compulsory for a town to provide compensation insurance for the workmen employed by it upon the highways of such town.

Where the State or municipal corporation or other political subdivision has no fund available for the payment of a premium for insurance in the State fund or with any stock corporation or mutual association authorized to transact the business of workmen's compensation insurance in this State, such compensation may be secured upon application to the State Industrial Commission to be made a self-insurer under section 50 of the Compensation Law.

INQUIRIES

The State Commissioner of Highways and various town superintendents of highways and other town and city officers have submitted inquiries as to the effect of the amendment to the Workmen's Compensation Law by chapter 622 of the Laws of 1916 in its application to the employees of the State, its municipal corporations and other political subdivisions thereof.

OPINION

Chapter 816 of the Laws of 1913, which originated the present Workmen's Compensation Law of this State, defined the term "employer" as not including the State or a municipal corporation or other political subdivision thereof. (Laws 1913, chap. 816, § 3, subd. 3.)

By chapter 316 of the Laws of 1914, the definition of "employer" was amended to read as follows:

> 'Employer' except when otherwise expressly stated, means a person, partnership, association, corporation, and the legal representatives of a deceased employer, or the receiver or trustee of a person, partnership, association or corporation, employing workmen in hazardous employments *including* the state and a municipal corporation or other political subdivision thereof.

The term "employment" was, however, defined in subdivision 5 of section 3 of the Compensation Law as follows:

> 'Employment' includes employment only in a trade, business or occupation carried on by the employer for pecuniary gain.

On June 9, 1914, the matter of the application of the Compensation Law to the State, its municipalities and political subdivisions was considered by Attorney-General Carmody and an opinion was rendered by him to the effect that these two definitions had to be harmonized and that the restrictions of the term "employment" were applicable to the State, its municipalities and political subdivisions and that their employees were only subject to the Compensation Law so far as they were engaged in an employment carried on by the State or municipality or other political subdivision for pecuniary gain. (Attorney-General's Opinions, 1914, p. 191.)

By chapter 622 of the Laws of 1916, the Workmen's Compensation Law has been amended by adding to section 2 thereof, a new group known as group 43, which reads as follows:

> Group 43. Any employment enumerated in the foregoing groups and carried on by the State or a municipal corporation or other subdivision thereof, notwithstanding the definition of the term 'employment' in subdivision 5 of section 3 of this chapter.

The Legislature has thus clearly brought within the provisions of the statute any employees of the State or a municipal corporation or other subdivision thereof who are engaged in any of the hazardous employments set forth in groups 1 to 42 of section 2 of the Compensation Law, irrespective of the fact whether the State or a municipal corporation or other political subdivision is engaging in the trade, business or occupation for pecuniary gain.

It is, therefore, clearly the duty of the proper officers of the State, its municipal corporations and other political subdivisions to examine the various groups of employment covered by the act as set forth in section 2 thereof and to secure the payment of compensation to such employees as may be covered thereby in one of the ways provided by the statute.

Section 50 of the Compensation Law provides that an employer shall secure compensation to his employees in one of the following ways:

> '1. By insuring and keeping insured the payment of such compensation in the State Fund, or
>
> 2. By insuring and keeping insured the payment of such compensation with any stock corporation or mutual association authorised to transact the business of workmen's compensation insurance in this State. If insurance be so effected in such a corporation or mutual association, the employer shall forthwith file with the commission, in form prescribed by it, a notice specifying the name of such insurance corporation or mutual association and such information regarding the policies as the commission may require.
>
> 3. By furnishing satisfactory proof to the commission of his financial ability to pay such compensation for himself, in which case the commission may, in its discretion, require the deposit with the commission of securities of the kind prescribed in Section 13 of the Insurance Law, in an amount to be determined by the commission, to secure his liability to pay the compensation provided in this chapter. The commission shall have the authority to revoke its consent furnished under this section at any time for good cause shown. (Sec. 50 of the Compensation Law as amended by Chap. 622 of the Laws of 1916.)

I have been specifically asked whether the employees of the town superintendent of highways of a town are covered by the Workmen's Compensation Law. It is my judgment that it is compulsory for a town to provide compensation insurance for the workmen employed upon the highways of the town. This seems to be expressly covered by group 13 which reads as follows:

> Group 13. Paving; road building, curb and sidewalk construction or repair; * * * *

I have also been asked as to what fund may be used for the payment of such compensation insurance. In view of the fact that State and municipal employees have not been considered heretofore as coming within the provisions of this statute, except in the isolated cases where the State or a municipality might be deemed to be carrying on an occupation for pecuniary gain, it must be assumed that the various municipalities of the State have not made provision for the payment of the premiums for such insurance in the annual budget for the current year. No moneys are available in such cases unless embraced in some contingent fund or unless special authority has been granted by statute which has not come to my attention. I am informed by the State Industrial Commission that a resolution has been passed by that Commission permitting the State, its municipal corporations and other political subdivisions to become self-insurers which seems to me to be the only practical solution available at this time. It is, therefore, to be assumed that upon the application to the State Industrial Commission by the proper officials of any municipal corporation or other political subdivision of the State permission will be granted to secure compensation to the employees of such municipal corporation or other political subdivision engaged in any of the hazardous employments covered by the act through the method known as self-insuring. If the State or any municipal corporation or other political subdivision desires to adopt one of the other methods of insuring for the ensuing fiscal year, it will have to do so by making suitable provision therefor in its next budget.

E. E. WOODBURY,
Attorney-General.

TO THE STATE COMMISSIONER OF HIGHWAYS ET AL.

(b) The Workmen's Compensation Law Applies to Painters in State Employ; Painters' Colic is Not Accidental (§ 2, gr. 43)

June 17, 1916.

GEORGE L. NICHOLL, ESQ., *Rose Bank, N. Y.*

DEAR SIR.— In reply to your letter of the 16th instant in reference to painters, would say that since the amendments to the Workmen's Compensation Law which took effect on June 1, painters employed by the State or by a State Department would be entitled to compensation in case of disability from accident.

Under the Compensation Law they would not be entitled to compensation for the first two weeks, but after that period they would be entitled to two-thirds of their wages during the period of disability.

I am of the opinion, however, that painters' colic would not be considered an accident under the Workmen's Compensation Law, but rather an occupational disease.

Yours truly,
E. E. WOODBURY,
Attorney-General.

By E. C. AIKEN,
Deputy Attorney-General.

(c) The Workmen's Compensation Law Does Not Apply to School Employees Except Possibly Janitors (§ 2, gr. 43)

June 17, 1916.

WILLIAM P. CAPES, ESQ., *25 Washington Ave., Albany, N. Y.*

DEAR SIR.— In reply to your letter of the 16th instant, would say that I am of the opinion that cities are required either to insure or to get permission to carry their own insurance in reference to employees who are engaged in any of the hazardous occupations described in the 42 groups of section 2 of the law.

None of these groups seem to include the school systems of the State, and I do not think it is necessary to carry insurance except as to the hazardous employments described in the said 42 groups. This would not include employees in school systems of the State, except possibly the janitors, who have to take care of boilers in the buildings.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By E. C. AIKEN,
Deputy Attorney-General.

(d) The Workmen's Compensation Law Does Not Apply to School Teachers (§ 2, gr. 43)

October 4, 1916.

HON. HARRY G. HORTON, *President, Board of Education, Afton, N. Y.*

DEAR SIR.— I have received your letter of September 26th asking me to advise you whether the Workmen's Compensation Law is applicable to school teachers of the State. It is my opinion that the law has no application to such teachers. The Workmen's Compensation Law, by reason of an amendment by chapter 622 of the Laws of 1916 is applicable to the employees of the State or a municipal corporation, or other subdivision thereof, wherever such employees are engaged in any of the hazardous employments classified in section 2 of that law. Section 2 specifies in 42 groups, the employees who are deemed to be engaged in hazardous employments. I do not find that any of these groups cover the employment of school teaching, and I, therefore, advise you that there is no necessity for taking out compensation insurance covering the teachers in your district.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By H. J. HINMAN,
Deputy Attorney-General.

(e) The State Industrial Commission May Cancel State Fund Policies for Non-Payment of Premiums (§§ 53, 67)

February 11, 1916.

STATE INDUSTRIAL COMMISSION, *1 Madison Ave., New York City.*

GENTLEMEN.— I have been considering the question of cancellation of policies in State Fund for non-payment of premiums, together with the proposed ruling of your Commission providing for such cancellation.

The ruling which you propose to adopt is as follows:

> In any case where an insurer in the state fund is in arrears in the payment of a premium and remains in arrears for   days after demand, the manager of the state fund may cancel said policy by a notice in writing, mailed to such insurer by registered mail, at his last known post office address, and fixing a period when such notice shall become effective, not less than ten days thereafter.

I do not find any provision in the statutes directly authorizing the cancellation of policies in the State Fund for non-payment of premiums, neither do I find any provision denying the right to cancel such policies, and it would seem to me under section 67 of the Compensation Law, that the Commission has power to adopt reasonable rules for the collection, maintenance and disbursement of the State Insurance Fund and for carrying into effect the general provisions of the Compensation Law, and would have the power to pass such a rule unless by the terms of the policy a contract has been entered into, which cannot be violated by the State.

This leads to a consideration of the policy which has been issued by the State Insurance Fund. I find upon an examination of such policy, a provision for the automatic renewal which reads as follows:

> The insurance under this policy shall automatically renew and continue in full force after the expiration of the original six months period for succeeding periods of six months, and the insured employer shall be liable for the renewal premium thereon for each such succeeding six months period, unless in compliance with the provisions of section 100 of the Workmen's Compensation Act, he shall * * * have made other provision for securing the payment of compensation as required by Subd. 2 or 3 of section 50 of the act.

This provision, standing alone, could be interpreted as precluding the State Industrial Commission from ever cancelling any of its policies notwithstanding the fact that no premiums were paid. It would seem to me to be contrary to public policy to so interpret that language as to provide for any such result if it is possible to reach any other conclusion as to the purpose and effect of such language. It would seem to be contrary to public policy to permit the State Industrial Commission to bind this trust fund placed in its charge in perpetuity to supply insurance to the insured employers in such fund, notwithstanding the fact that no renewal premiums were paid.

I believe that in interpreting this provision for automatic renewal, we should read the other provisions of the policy to see if we can get further light upon the meaning of that expression. I find that when the policy was first issued it was clearly provided that it should not take effect unless the advance premium of six months' insurance had been paid to and received by the Commission. It is further provided, if any additional premium is found due upon a readjustment, that it is to be paid to the State Commission within fourteen days after notice. I find that each renewal premium is payable within fourteen days after notice of the rate and amount thereof, and I find that the following provision of section 53 of the Compensation Law is quoted and made a part of the policy:

> Release from all liability. An employer securing the payment of compensation *by contributing premiums* to the state fund *shall thereby become relieved from all liability* for personal injuries or death sustained by his employees, etc.

It will be seen that release from liability was intended to depend upon the contribution of premiums. This is in the statute and is made a part of the policy.

It is clear from the above that it was intended as a material part of the contract that there should be a prompt payment of the premiums when due, and I believe that the provision with reference to automatic renewal can be interpreted as meaning that no new application was necessary at the end of each period of six months and that the policy should continue in force without any renewal of application, provided, of course, that there was compliance with the other provisions of the policy as to payment of the premiums.

As the policy is by its own terms to be construed by reference to the Compensation Law, and as the Compensation Law clearly gives the power to the Commission to make reasonable rules, not inconsistent with the statute, for the purpose of carrying out the details of its provisions, I believe that it is within the power of the Commission to make the rule proposed with reference to the cancellation of policies where there has been a failure to pay the premiums.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By H. J. HINMAN,
Deputy Attorney-General.

(f) Witnesses under the Workmen's Compensation Law Depend Upon Special Legislative Appropriation for Their Fees (§ 71)

August 11, 1916.

STATE INDUSTRIAL COMMISSION, *Albany, N. Y.*

GENTLEMEN.— Your letter of August 8th, with reference to payment of witnesses' expenses in compensation cases, itself suggests the only solution which this office is able to advise. Apparently, in appropriating moneys for maintenance and operation of the Industrial Commission, the Legislature has, by segregating the items, left the expense of witnesses unprovided for. You can, therefore, but certify the amount of the fees and await action by the next Legislature.

Yours very truly,
E. E. WOODBURY,
Attorney-General.

By C. T. DAWES,
Deputy Attorney-General.

(g) Limitations upon Separate Grouping of a Single Employer for Rating and Dividend Purposes (§ 95)

January 26, 1916.

STATE INDUSTRIAL COMMISSION, *Albany, N. Y.*

The only way in which a single employer in the State Insurance Fund can be separately grouped by the State Industrial Commission for rating and dividend purposes, under section 95 of the Workmen's Compensation Law, is where the nature of his business and the degree of risk of injury is such that he, in fact, represents a group by himself, subject, however, to the opportunity of other employers in the State Fund who came within its limitations to be made members of that group; and the only way in which a single employer in such State Fund can secure a rate different from that allowed to other employers in such fund of the same group is through a system of schedule rating which takes into account the peculiar hazard of each individual risk. But, for dividend purposes, even an employer so rated still remains in the group in which he is placed and dividends must be declared as the result of the total experience of the group of which he is a member for the premium period.

INQUIRY

Can the State Industrial Commission under section 95 of the Workmen's Compensation Law (chap. 41, L. 1914), in rearranging the groups set forth in section 3 thereof, set up an individual employer in a separate group?

STATEMENT

It appears that there are certain employers in the State having a very large and varied group of employees. The State Industrial Commission, using the power conferred by section 95 of the Compensation Act to rearrange groups, has in some instances set up such an individual employer in a separate group, upon the theory that the word "group" may be defined or construed for purposes of administering the State Insurance Fund as properly applicable to an individual employer having a payroll exposure sufficiently large to afford a satisfactory insurance distribution. It is the practice in declaring dividends to credit to such an individual employer constituting such an individual group, any balance of his premium remaining after paying all losses on his account, and after setting up the loss reserves and catastrophe surplus required by section 7 of the act. This dividend is credited upon the next installment of premium due the State Fund. My opinion is asked whether this is permissible under the act.

There is no definition of the term "group" in the act. For the purposes of sections 95 and 97 and from the point of view of insurance administration, the Commission seems to construe the word "group" as meaning an insurance unit. They say:

> The test of what constitutes an insurance unit is to be found not in the number of employments or employers in any case, but in the amount of the pay-roll exposure. For purposes of administering the State Insurance Fund, it is not proper to recognize as a 'group' any number of employments or any number of employers, whose total pay-roll exposure is too small to afford a satisfactory insurance distribution. On the other hand, it is entirely proper to set up as a 'group' within the meaning of the Act, any individual employment or any individual employer with a payroll exposure sufficiently large to give a satisfactory insurance distribution. In determining what amount of pay-roll exposure shall be taken as affording a satisfactory insurance distribution.

the rule adopted by the State Insurance Fund calls for a pay-roll of approximately twenty-five hundred employees, or an expenditure of about twenty thousand dollars per week. Any line drawn here must be of necessity somewhat arbitrary, but it is generally recognised by actuaries that a pay-roll exposure representing twenty-five hundred employees, or twenty thousand dollars per week is sufficiently large to yield a proper insurance distribution. In other words, any individual employer or any number of employers in the same trade, having a pay-roll exposure of this size, constitutes what may be termed a real insurance unit. This is recognized by the provisions of the Insurance Law governing the formation of mutual companies which lays down as one of the conditions for the formation of such a company, a pay-roll of at least twenty-five hundred employees. I submit that this interpretation of the word 'group' as meaning an insurance unit composed of either a number of employments or employers, or consisting of a single employment or employer with a sufficient pay-roll exposure to afford a satisfactory insurance distribution, is a reasonable and proper one, especially in view of the absence of any definition of this term in the act, and the precedent established by the official interpretation placed upon the word 'group' as used in a similar provision of the Massachusetts Act."

THE STATUTE

The following are the provisions of the statute (Workmen's Compensation Law) which bear upon the subject of grouping:

§ 2. Compensation * * * shall be payable for injuries * * * incurred by employees engaged in the following hazardous employments:

Group 1. The operation, including construction and repair, of railways operated by steam, electric or other motive power, street railways and incline railways * * *

(This section then goes on to divide the hazardous employments subject to the law into 42 groups, each being numbered consecutively.)

§ 90. Creation of state fund. — There is hereby created a fund, to be known as "the state insurance fund", for the purpose of insuring employers * * * Such fund shall consist of *all premiums received and paid into the fund.* * * * Such fund shall be applicable to the payment of losses sustained *on account of insurance* * * * in the manner provided in this chapter.

§ 95. Classification of risks and adjustment of premiums.— Employments * * * shall be divided, for the purposes of the state fund, into *the groups set forth in section two of this chapter.* Separate accounts shall be kept * * * in respect *to each such group* for convenience in determining *equitable rates;* but for the purpose of paying compensation *the state fund shall be deemed one and indivisible.* The commission shall have power *to rearrange any of the groups set forth in section two* by withdrawing any employment embraced in it and transferring it wholly or in part *to any other group,* and from such employments to set up *new groups* at its discretion. The commission shall determine the hazards of the *different classes composing each group* and fix the rates of premiums therefor based upon the *total payroll and number of employees in each of such classes of employment* at the lowest possible rate consistent with the maintenance of a solvent state insurance fund and the creation of a reasonable surplus and reserve; and for such purpose may adopt a system of schedule rating in such a manner as to take account of the peculiar hazard of *each individual risk.*

§ 97. Requirement in classifying employment and fixing and adjusting premium rates.

1. The commission shall keep an accurate account of the money paid in premiums *by each of the several classes of employments or industries,* and the disbursements on account of injuries and deaths *of employees thereof* * * * and also on account of the money received from *each individual employer* and the amount disbursed * * * on account of * * * *such employer.*

2. On January first, nineteen hundred and fifteen, * * * a readjustment of the rate shall be made for *each of the several groups of employments or industries and of each hazard class therein,* which, in the judgment of the commission, *shall have developed an average loss ratio* * *

3. If any such accounting show an aggregate balance (deemed by the commission to be *safely and properly divisible*) remaining to the credit of *any class of employment or industry,* * * * the commission may in its discretion credit *to each individual member of such group,* * * * such proportion of such balance as the amount of *his prior paid premiums* sustains to the whole amount of such premiums *paid by the group to which he belongs,* since the last readjustment of rates * * *

OPINION

The Commission seems to feel that the establishment of individual groups in the State Insurance Fund is in the interest of the safety and solvency of the fund, and for the benefit of all employers and employees insured in it, and that large employers of labor are thereby induced to take insurance in the State Insurance Fund in preference to carrying their own risks as self-insurers. The Commission claims that it is of benefit to not only the employers so grouped, but also the State Insurance Fund as a whole, and the other employers insured in it since it increases the financial strength and stability of the fund by enlarging its premium income, its loss reserves and its catastrophe surplus, and reduces the cost of insurance to every policy holder by lowering the proportion of overhead charges falling upon the individual employer. It is said to be of advantage, also, to the employees of policy holders placed in individual groups, as it furnishes the strongest possible incentive to improve the safety equipment of plants.

That the language of section 95 is very broad, conferring upon the Commission large powers to combine and rearrange groups, to divide and subdivide employments, to transfer any employment wholly or in part, to any other group set forth in section 2, and from such employments set forth in section 2, to set up new groups at its discretion, is undoubted. Moreover, assuming for the purpose of argument, that the language of the statute is broad enough to imply authority for the Commission to create such a plan of individual grouping, the question of its expediency and advisability, regarded from the point of view of business policy and insurance economics, is one that must obviously be determined by the judgment of the Commission. I am concerned only with the legality of such a method. If the Commission holds it to be sound and wise to set up individual employers in separate groups, the attitude of the Commission should be sustained, if the language of the act may reasonably be construed as conferring or implying authority for such action.

It will be seen that sections 95 and 97, bearing on the classification of risks and the fixing and adjusting of premium rates and the declaring of dividends, treat employers who are insured in the State Fund from three different standpoints, namely, that of a "group," that of a "class" and that of an "individual."

Etymologically, the term "group" means two or more things having some relation to each other. Words in a statute must be deemed to have been used in their ordinarily accepted meaning, unless the contrary can be shown to appear from the context. Therefore, the very use of the word "group" standing alone would seem to indicate an intention of the legislature that there should be more than a single individual employer in any "group," unless the nature of his business is such that he is the only one transacting business of that kind within the State, or unless the peculiar hazard of his business is such as to make it susceptible of a separate classification; but in either event, whether from the standpoint of the nature of the business, or the degree of risk of injury, it would seem that the "group" idea could only be carried out, within the ordinary meaning of that term, by making the classification available to all employers coming within the limitations thereof. The legislature has exemplified the "group" idea in section 2 of the act and, in the absence of definition, it would seem that nothing less could be conveyed by the use of the word "group" in section 95 than is concretely illustrated in section 2. For example, if the Commission for State Fund purposes, should create a group of which all employers of a certain class might become members, and only one of them should insure in the State Fund, this would be a "group" within the meaning of the statute. The grouping would consist in the classification whereby the door would be open to all employers of the same class having the same hazard to come in at any time and enjoy the same classification and receive the same treatment.

This view is strengthened, rather than otherwise, when we consider the context. The statute uses the word "class," as well as "group." Section 95 mentions "classes composing each group" and "such classes of employment." Evidently classes were intended to be subdivisions of groups. Similar phrasing is used in section 97, namely, "each of the several classes of employment or industry," and "any class of employment or industry;" while, what a "class" is pretty clearly indicated by the use of the word "hazard class" in subdivision 2 of section 97.

Really, then, a "class" within the meaning of this statute is a part of a "group" and must be, in an insurance sense, composed of employments having the same hazard.

That these classes are to be made up of individual employers having the same hazard, if more than one such employer exists and is insured in the State Fund, seems clear from the language of section 95, providing that "the commission shall determine the hazards of the different classes composing each group," and from the use in subdivision 3 of section 97, of the words "each individual member of such group." This subdivision, having to do with dividends, indicates that dividends must be paid by group, rather than class and that as a member of a group, his dividend is limited to such proportion as the amount of his prior paid premiums sustain to the whole amount of such premiums paid by the group to which he belongs.

That classes may, *in effect*, be made up of individual employers seems clear from the last sentence of section 95, namely, for the purpose of fixing rates of premiums. The Commission is permitted to fix the rates of premiums, based upon the total payroll and the number of employees in each of the classes composing each group and "may adopt a system of schedule rating in such a manner as to take account of the peculiar hazard of each individual risk." In other words, the Commission is permitted to discriminate in the making of rates, but the nature of so doing is not arbitrary, but is presumed to take into account some hazard, or protection against some hazard, as for example, the number and variety of employees, as giving a special experience for insurance purposes, and the amount of safeguard preventatives of accident, adopted as part of the equipment or system of an employer, and which might justly entitle him to be classified as a separate class or risk, because of his peculiar hazard, and because he really represents at the time a class within a group.

The law thus seems to permit the Commission to create new groups, but each group should be available to all employers coming within its limitations, and if a group is divided into classes, each class should be available to all employers within the group, who come within its limitations. To make an individual a group or class by himself, the Commission should be able to point to the peculiar hazard of the individual risk which justifies its separation as such.

If the Commission can justify any of its individual groupings upon the above basis, I can see no objection from the standpoint of its legality. If, however, the Commission find it necessary, upon the above basis, to place any such individual employer in a class within a group, the law seems to prevent the payment of a dividend to such an individual employer based solely upon his own experience and the cost of carrying his own insurance plus the amount credited to the surplus and reserve fund. There would seem to be no illegality, however, in the Commission fixing the original premium, and adjusting later premium rates to accomplish the same result by basing the rate upon the peculiar hazard, to be determined in the first instance by each peculiar hazard, or protection against such hazard, namely, in accordance with the total payroll, the number of employees, safety appliances, system and so forth, and later to be determined upon such elements together with the average loss ratio experienced in connection with such individual risk.

It is, therefore, my opinion that the only way in which a single employer in the State Fund can be separately grouped is where the nature of his business and the degree of risk of injury is such that he, in fact, represents a group by himself, subject, however, to the opportunity of other employers coming within its limitations to be made members of that group; and the only way in which a single employer in the State Fund can secure a rate different from that allowed to other employers in such fund of the same group is through a system of schedule rating, as provided in the last sentence of section 95. But, for dividend purposes, even an employer so rated still remains in the group in which he is placed and dividends must be declared as the result of the total experience of the group of which he is a member for the premium period.

E. E. WOODBURY,
Attorney-General.

By H. J. HINMAN,
Deputy Attorney-General.

To STATE INDUSTRIAL COMMISSION, ALBANY, N. Y.

CONVICTS' DEPOSITS AND EARNINGS (PRISON LAW, §§ 125, 134, 185, 187)

Moneys Cannot Be Invested in Stock of Goods to be Sold Indiscriminately to Inmates

May 25, 1916.

HON. E. M. TRAVIS, *Comptroller, Albany, N. Y.*

The money standing to the credit of inmates of the several prisons, reformatories and penitentiaries cannot be legally used for the purchase of goods for a so-called "convicts' store."

INQUIRY

Is it lawful and proper to purchase goods with convicts' money which has been deposited by the convicts in accordance with the provisions of sections 125 and 134 of the Prison Law?

OPINION

I am informed that for some time there has been conducted at Sing Sing prison a so-called "Convicts' Store" from which goods may be purchased at cost by the inmates of the prison, and that the stock of such store is purchased with money deposited by the convicts with the agent and warden of the prison.

The Prison Law anticipates two sources from which money may be deposited to the credit of convicts while working out their terms in the various prisons, reformatories and penitentiaries of the State.

First.— Such money as the convict may bring with him when he is committed to the prison and any other money which any other person may deposit for the prisoner's benefit as stated in section 134 of the Prison Law.

Second.— Money earned by him while an inmate as provided in section 185 of the same law.

It is provided by section 134 that the money belonging to a prisoner under the first above classification shall be taken charge of by the agent or warden of the prison, and shall be returned to him upon his discharge unless it is otherwise legally demanded, with interest at the rate of 4 per cent per annum. It is apparent that such moneys cannot be used for the purpose of purchasing goods for a store but are to be kept by the agent and warden and returned to the prisoner on his discharge or to some other person entitled to demand it.

Section 125 applies to both of the aforesaid classified funds and should be considered in connection with section 187 of the same law.

It is provided in section 125 in part as follows:

> "The moneys so deposited by such agent and warden as convict deposits and miscellaneous earnings shall be subject to his check or draft only when countersigned by the comptroller. The comptroller shall countersign such check or draft only when the same is drawn for the payment of an expenditure included in an estimate approved by the superintendent of state prisons, and for the purposes hereinafter stated. The agent and warden of each prison shall, on the first day of each month, make an estimate and detailed statement of all moneys that will, in his judgment be required for clothing, allowance and transportation of United States prisoners, and to repay to convicts moneys on deposit to their credit, and the interest thereon, as provided by section one hundred and thirty-four of this chapter, during such month, which estimate shall be forwarded to the superintendent of state prisons, who may revise the same by reducing the amount thereof, and he shall certify that he has carefully examined the same, and that the sums stated in said estimate are actually required for the purposes above stated, and he shall thereupon deliver the said estimate, so certified, to the comptroller."

It is thus made clear that no money standing to the credit of a prisoner can be withdrawn except upon checks countersigned by the Comptroller in payment of an estimate approved by the superintendent for the purposes hereinafter stated.

It is also provided by section 187 that any surplus standing to the credit of a convict on account of his earnings under section 185, may be drawn out by the prisoner during his confinement, "only upon the certified approval of the superintendent of state prisons for disbursement by the agent and warden of said prison or superintendent of said reformatory to aid dependent relatives of such prisoner, or for such other purposes as the Superintendent of State Prisons may approve; or may, with the approval of the said superintendent of state prisons be so disbursed without the consent of such prisoner."

This section does not seem to contemplate the use of any of the moneys belonging to a convict for any purpose except such as will meet the approval of the Superintendent of Prisons. It follows, therefore, that the legislature intended to charge the superintendent, in every instance, with the responsibility of allowing a prisoner to withdraw any of his earnings while still in confinement, and it becomes the duty of the superintendent to inquire into the use which a prisoner intends to make, while still in prison, of any of his earnings, and if such use is deemed reasonable and proper by him, within the limits authorized by statute, it can be allowed, but in every instance it is addressed to the discretion and good judgment of such superintendent, and calls for the exercise of an administrative duty which is imposed by the statute solely upon the superintendent.

I am informed that the store in question is supplied with certain goods which the convicts are allowed to purchase therefrom at cost, and thus save for themselves the profits which would otherwise accrue to some outside dealer if the same goods were purchased from him; and that the store is wholly within the prison grounds, and conducted under certain prison regulations and taken care of under prison authority, and the only legal question involved, is whether such use of the inmates' money is justified under the statute.

In so far as an inmate's money is invested in a supply of certain commodities which he may require for his own use, and which he is permitted to have and use from time to time upon the order of the agent and warden, and thus save himself the profits which some outside dealer would charge if such goods were purchased in the open market, I think the use of such prisoner's money for such purposes would be fairly within the provisions of the Prison Law, but I do not think that inmates' money can be legally used, for a general investment in a stock of goods which are to be sold indiscriminately to any inmate, either with or without the consent of the prisoners.

An estimate can be made for such commodities as are deemed necessary for a prisoner by the superintendent under section 125 of the Prison Law, and if approved by the superintendent the warden would have the authority to use so much of such convict's money as would be necessary for the purchase of such goods, and while it is provided in section 187 that the earnings of a prisoner can be drawn out by him, as hereinbefore stated, "and for such other purposes as the superintendent of state prisons may approve, or may with the approval of the said superintendent of state prisons be so disbursed without the consent of such prisoner," there is nothing in the statute to indicate that the legislature intended that such funds could be used for any purpose except for the personal benefit of each prisoner as his requirements may demand; certainly there is nothing in the statute which would indicate the right on the part of the warden to use such funds for the stocking of a store with goods for sale to any prisoner who may desire the same, even with the consent of the prisoners whose money may be used for such purpose. A "Convicts' Store" may be convenient and of considerable benefit to the inmates of the prison but I can find no authority under the statute which permits the use of the prisoners' funds for such purpose either with or without the consent of such prisoners.

I am, therefore, very clearly of the opinion that none of the moneys standing to the credit of a convict, which are specified in section 134 of the Prison

Law, can be used for the purchase of goods for a "convicts' store" or otherwise; and that the moneys standing to his credit which were earned under the provisions of section 185 of the same law, cannot be used for the stocking of such a store, but may be used to purchase such supplies as the warden may estimate and the superintendent may approve for each individual prisoner from month to month.

Having reached this conclusion, it is perhaps unnecessary to add that that it would be neither proper nor lawful for the agent and warden to make purchases from such supplies as have been purchased for the prisoners as above indicated, for use in the warden's kitchen, and to pay for the same out of State funds.

E. E. WOODBURY,
Attorney-General.

By G. A. FISHER, *Deputy Attorney-General.*

APPENDIX

PROCEEDINGS

OF THE

FIRST INDUSTRIAL SAFETY CONGRESS

Syracuse, N. Y., December 11-14, 1916

Edited by the Bureau of Statistics and Information

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The House That Jack Built — Moving Pictures Exhibited by Marcus A. Dow, General Safety Agent, New York Central Lines (see p. 47).

Coal Mining in the United States and China — Moving Pictures Exhibited by Frank J. Milman, Executive Secretary, New York Coal Dealers Association (see p. 47).

Mining Plant of Witherbee-Sherman Co., Mineville, N. Y. — Moving Pictures Exhibited by W. W. Jones, Mine Inspector of New York Industrial Commission (see p. 47).

Plants of Ford Motor Co. at Detroit, National Cash Register Co. at Dayton, and United Shoe Machinery Co. of Boston — Moving Pictures Exhibited by Hubert Hornsby, National Civic Federation (see p. 119).

Hazards in a Lineman's Work — Lantern Slides Exhibited by J. F. Naylon, District Superintendent, New York Telephone Co. (see p. 189).

Factory Lighting — Lantern Slides Exhibited by L. B. Marks, Consulting Illuminating Engineer (see p. 213).

Factory Ventilation — Lantern Slides Exhibited by C. A. Booth, Buffalo Forge Company (see p. 232).

MONDAY AFTERNOON, DECEMBER 11

Presiding Officer: James M. Lynch, New York Industrial Commission,
President of the Congress.

The Congress was opened with prayer by Dr. Charles A. Fulton.

Commissioner Lynch: I presume, Ladies and Gentlemen, in opening this Industrial Safety Congress, it is scarcely necessary to refer to its object, but briefly stated, that object is the prevention of accidents and the conservation of health. Similar congresses or assemblages have been held in some of the other states and have been notably successful in creating a greater and a deeper interest in this movement for the prevention of accidents. I believe from the returns that we have from the invitations sent to the employers and the organizations of labor of the State that we will have this week perhaps the most successful of these congresses for the promotion of safety. I asked the Bureau of Statistics and Information to prepare for me some figures in relation to the accidents in the State, and what they mean to industry, and to society generally. And as figures, when plainly stated, are always impressive, I am sure that those I am about to read will make an impression that will be lasting, and that they will also in themselves be the very best justification for the Industrial Commission in calling this Industrial Safety Congress. The records of the Compensation Bureau indicate that for the calendar year 1916 the total number of compensated accidents in this State will reach 60,000. On the basis of past experience in this State and elsewhere it is possible to estimate pretty well how these will be distributed as to extent of disability. Approximately these 60,000 cases will include 1,500 deaths, 120 permanent total disabilities, 6,180 permanent partial disabilities, and 52,200 temporary disabilities or loss of time of more than two weeks. These figures might be translated thus: At the present time for each working day in the year, reckoning 300 days per year, 5 employees are killed, 21 permanently crippled or maimed, including for every three days one permanently and totally disabled, and 174 suffer serious temporary injuries. The amount of compensation under the law, exclusive of medical benefits, for these 60,000 accidents will be in round numbers $11,500,000, including nearly $5,000,000 for deaths, nearly $4,500,000 for permanent injuries, and over $2,000,000 for temporary injuries. Or translating again into figures per working day, compensation for accidents is being paid at the rate of nearly $40,000 per day. Of course the $11,500,000 for compensation does not represent the total economic loss from accidents. To that would have to be added several other items, including the cost of medical benefits, of administering the Compensation Law, of administering insurance, and the wages and medical loss of injured employees who are not covered by compensation. Pushing the matter to the point of estimating these further losses, it appears the total cost represented by wage loss, medical expenses and cost of paying compensation for accidents covered by the Compensation Law reaches in this State $30,000,000 per year at present. Reduced to a working day basis, this means loss at the rate of $100,000 per day. The above figures give some idea of the losses of life, of the amount of physical injury, and of the money wages, the reduction of which is the object of the safety movement. A suggestive comparison may be made between the economic saving which a very little reduction in accidents by safety work would mean and the cost of administering the Department of Labor. The total appropriation for the Department for the current year amounts to $1,139,784. If, therefore, as a result of the safety movement the economic losses from accidents were to be reduced only 4 per cent that would be a saving to the people of the State equal to the entire cost of the Department, many of whose activities have to do with other matters than accidents. Or again, if we reduce accidents by 10 per cent the saving in the amount of compensation alone would equal the present appropriation for the Department. A reduction in accidents of 10 per cent can scarcely be regarded as more than a very modest undertaking, in view of things actually being done by firms in this State which have been making vigorous efforts to prevent accidents. Very suggestive of the possibilities of this field are the results accomplished by nine such plants in as many different industries. In two years eight firms have reduced their accidents by over 30 per cent and two as high as 62 per cent. The reduction was 40 per cent or over in case of five, and over 50 per cent in case of two. Another firm with long experience had reduced its rate by 75 per cent in four years. Now, I am sure that with the example of these nine firms before us, we can at least hope that this, the first Industrial Safety Congress to be held in this State, will result in the reduction of accidents in the industrial establishments of the State by at least 10 per cent. When we refer to accidents we are quite apt to associate accidents almost entirely with industry, yet it is my impression that the accidents in industry are only a part, perhaps not an inconsiderable part, but a part of the number of accidents that take place in this State every day. If this Industrial Safety Congress is a success, which we believe and hope it will be, its example and influence will extend to all walks of life; and will bring the desirability and the necessity for the greatest caution and care in the prevention of accidents to the attention of all of the people of the State, regardless of whether they are employed in industry or where they may be employed, or whether they are traveling or about their daily task, and that, therefore, this Congress will have a most salutary effect in that direction.

A number of the acceptances of the invitations specified the particular days on which the recipients would attend the Congress. Some of the manufacturers of the State are interested in some particular subject or some particular subjects on particular days. Others are interested in the subjects for the other days and some for the entire Congress. But I believe, take it altogether, from the acceptances received, that the attendance during the four days will be fairly well representative of the industries of the State.

Now before concluding what I have to say, I want to call attention of the attendants to the New York Central safety car, under the management of Marcus A. Dow, which is at the New York Central station on track No. 1, and is, I think, in almost continuous operation, and all of the attendants at the Congress will be heartily welcome there, and a visit there will fully repay the time spent in making it. And then this evening in the Church is the Women's Evening, the general topic being Women in Industry. The Commission and the general committee in charge of this Congress are highly desirous that we shall have this Church well filled this evening, so that there may be that special interest and special attention given to the program which covers that general subject of women in industry.

I am also requested to announce at this time that the local Manufacturers' Association will have a committee on the parlor floor of the Onondaga for the benefit and convenience of the attendants in securing rooms, if they may not be able to secure them at the hotel, or imparting any other local information that the attendants of the Congress may desire.

I sincerely trust that all of us will be edified by the program of the Congress, that all of us will enjoy ourselves while we are here, and as a prelude to that enjoyment you are to listen to an organ recital by the organist of this Church, Mr. Courboin.

ORGAN RECITAL

BY PROFESSOR CHARLES M. COURBOIN, ORGANIST, FIRST BAPTIST CHURCH

COMMISSIONER LYNCH: You must have noticed as you came into the city that Syracuse bids you welcome. We are to have that welcome officially translated to you this afternoon by the Mayor of the city, his Honor, W. R. Stone.

ADDRESS OF WELCOME

BY HON. WALTER R. STONE, MAYOR, CITY OF SYRACUSE

I am sure that it is not necessary for me to bid you welcome. The burst of harmony and melody that we have just been pleased with is a very much better welcome than I could give you, and it seems to me most appropriate that this Congress should be opened to the harmonious strains of this beautiful organ so well played. And if the enthusiasm of you who represent the thought of this Congress will carry throughout this Church, as did those tones, it seems to me that any welcome of mine can be nothing more than a wish that those enthusiasms and those harmonies which are necessary to accomplish the purpose for which you are gathered together, will be as great as any of us might wish. Now I do welcome and do greet you to Syracuse, and I do so sincerely, because we in Syracuse for some time past have been tremendously interested in the matter of public safety, and that includes industrial safety, as well as matters of accidents on the streets, etc. In fact I think I am not mistaken when I say that Syracuse was one of the first, if not the first city to conduct a public safety first campaign. We have repeated it once or twice since then. But at least we were one of the earliest to do that work, and it was productive of very much good. It is a matter of great concern to our Public Safety Department. The Commissioner of that Department and some of his deputies have recently returned, and I think just to-day are returning from Baltimore where the Safety First Federation and the Safety First Congress is meeting, or did meet last week. We expect them to come back here with many ideas and many plans to improve safety conditions on the streets of Syracuse. I don't question but what they have learned down there matters of interest to you manufacturers here in Syracuse, and through you could be spread throughout the State.

Now Syracuse is mighty glad always to welcome conventions and congresses of all sorts that are doing constructive helpful work for mankind, and I am very sure that no congress that has been held within my knowledge in the city of Syracuse, in view of the facts and figures presented by Commissioner Lynch, can be of greater benefit to humanity than can this Congress, and I wish you great success in your work.

COMMISSIONER LYNCH: Governor Whitman had expected to be here to-day, but at the last moment unforeseen contingencies prevented his leaving Albany, and so we have secured as his substitute, the Lieutenant-Governor of the State, also, by the way, a former Mayor of the City of Syracuse. All the great men start by being Mayor of Syracuse. I therefore have pleasure in introducing the Lieutenant-Governor, who will speak to you.

ADDRESS

BY HON. EDWARD SCHOENECK, LIEUTENANT-GOVERNOR, STATE OF NEW YORK

I assure you that I share in the general regret over the disappointment in not having Governor Whitman present on this occasion. I myself have been drafted into this service within so brief a space of time that I scarcely realize the importance and the magnitude of this project, which is being so admirably started here to-day. It was not until I had an opportunity to run over the program of this week that I discovered the galaxy of notable men from this State, from this nation, who have lent their names, have lent their influence and have promised, in accordance with this program, to come to Syracuse and take part in this great movement, take part in the discussions, and to exchange their views and ideas with reference to that important question of the prevention of accidents. I know that Governor Whitman, if he were here, would be one of the first to extend to those who have promised to participate in the events of this week the sincere thanks of the people of the State of New York as expressed through their chief executive. I know that if Governor Whitman were here and observed the auspicious opening of this Congress that he would feel deeply obligated to the State Industrial Commission for their apparent quick perception of the importance of accident prevention, of the keen interest which they have displayed, for that initiative and the courage with which they seem to have accepted and undertaken this important and most difficult work, and for the spirit of earnestness with which they have entered into it.

I think the people generally look too lightly upon this question of accident prevention. I am frank to say that when the Safety First movement started in Syracuse I had no idea of the importance of the movement or the extent to which it developed. Naturally, we all are moved by those considerations of human sentiments in our efforts and desire that so far as possible accidents should be prevented, but we sometimes look upon it solely as a matter of human interest and sentiment. We very rarely have been able to appreciate the many ramifications of this question. I was extremely interested in the figures which Commissioner Lynch read here to-day, which appeals not only, or aside from the question of sentiment and our humanitarian interest, but appeals to the economic side of this question of accident prevention. I happen to have had some experience in the general practice of law, and I know something of the frequency with which accidents happen, and I know something of the circumstances under which they happen. I know also of the many cases where men are totally disabled under circumstances which might, in my opinion, under a proper campaign of education, have been avoided. But my friends, do you appreciate that when Commissioner Lynch stated here this afternon that the cost of compensation and the economic loss to the people of this State amounted to $30,000,000, that that is equal almost to one-half of the cost of government of the entire State of New York. The figures are almost astounding. He also presented the startling statement that within the last two years this Department, with the co-operation of the employers and manufacturers in some of the plants where this work was taken up with interest and earnestness, has enabled them to reduce the number of accidents from 30 to 50 per cent. It speaks volumes for the co-operation of the manufacturers, it speaks volumes for the co-operation of the working man, and it speaks volumes for the Compensation Commission. And I say that with the co-operation of the manufacturers, the co-operation of the working man, and the Commission, the State of New York has indeed a situation on which it may well congratulate itself. Altogether too many accidents have happened because of this lack of co-operation. Now the thought occurred to me that after we consider the pain and the suffering which necessarily result from accidents, the anguish of those who are injured and those dependent upon them, and then consider the cost in dollars and cents to the State of New York, we have still to consider the damage and the injury which has been done to the total productivity of our people, which is a matter of great concern.

My friends, I think that communities thrive, prosper, grow and occupy positions of importance, or positions of secondary importance, according to the total productivity, according to the accomplishment of all of the people, and according to the net result of the achievement of all of the people of the United States. It seems to me that every time we remove a man or a woman from the field of productiveness because of a total disability, we have transferred a national asset to a national liability. Now the ramifications of this phase is one that would naturally appeal to a person who has had some experience in public life. The Commissioner has referred to my having been Mayor of the City of Syracuse. I have had occasion to observe men in court seeking compensation for injury, who have been successful and sometimes unsuccessful. I know personal instances where these men have left the courtroom disappointed, and within six or seven months their families and those dependent upon them were applying to the doors of the Department of Charities of Syracuse for sustenance and for support. I know of cases where accidents have happened that have been serious in their nature, from which results epilepsy, sometimes insanity, sometimes serious injury to the eye, and again I see a new phase of this whole question. Whenever such an accident occurs you are starting, sooner or later, the man who was injured, or some of those who are dependent upon him, to some institution somewhere in the City or the State for aid and help at the public expense. We may maintain institutions for the treatment of epilepsy, we maintain institutions for the treatment of the blind, and we maintain institutions for the treatment of incipient cases of tuberculosis, and here it opens again the phase of the importance of the prevention of so called occupational diseases. Because of insufficient light men's eyesight is broken down, because of insufficient ventilation there results a condition of lung, and men leave these factories starting for somewhere. My friends, they almost always, sooner or later, become patients in an institution for the treatment of tuberculosis, in an institution for the treatment of the blind, or an institution which has charge of dispensing public aid.

When you consider this question in all of its phases, and I regret that I had not the time to give to this question such thought and such attention as I am sure it deserves so as to enable me to express a more positive notion on these subjects, but when you do consider it in all of its phases, to me it seems to be one of the most important propositions before the American people today. It treats both with the question of humanity and the question of economics. It deals with the question of factory economics and public economics.

I want to congratulate the Industrial Commission for this activity and the bringing about of this Congress. I want to congratulate the manufacturers of this state, and particularly of this locality, because I see so many of them present here, for the interest which they have shown. I want to say that I am absolutely sure that this movement will have behind it the full and complete support of the Governor of this State. I think I can bespeak the hearty co-operation of the Governor with this Commission in this work. I am sure that this is but the first step of what will mean much to the working man, to the manufacturer, and the entire people of the State of New York. I thank you.

COMMISSIONER LYNCH: The Duty of Employers in the Matter of Prevention of Accidents and the Conservation of Health of Employees by Colonel George Pope, President of the National Association of Manufacurers.

THE DUTY OF EMPLOYERS IN THE MATTER OF PREVENTION OF ACCIDENTS AND THE CONSERVATION OF HEALTH OF EMPLOYEES

BY COL. GEORGE POPE, PRESIDENT, NATIONAL ASSOCIATION OF MANUFACTURERS

I wish to extend my congratulations to those who are responsible for this important and splendid conference. When I survey the immense activity on the part of business men, in giving their time and thought for the betterment of industrial conditions, I regard it as complete refutation of the criticism often advanced that the controllers of industry are unmindful of the welfare of their co-workers. I appreciate the honor in being present today, and I extend to you the cordial felicitations of the Directors of the National Association of Manufacturers, and the sincere hope for a valuable, instructive and successful conference.

The subject to which I have been assigned is the duty of employers toward their employees in the matter of safety and health. Admittedly this topic yields the opportunity of a wide and many-pointed discourse. But under your program arrangement I appreciate the necessity for brevity in expressing the thoughts which are inspired by my subject.

Last week I attended, in Washington, the Conference on Social Insurance. It was a most representative gathering. The subjects discussed covered a wide range of social inquiry, particularly the operations of our various forms of Workmen's Compensation now in operation in all the industrial States of the Union, and also the question of Sickness Insurance, and topics relating thereto.

Throughout all of the written addresses and discussion one single note predominated, and that note was the necessity for a more comprehensive, united and co-operative effort to prevent occupational diseases and sickness incident to industry. The conference was somewhat divided on the question of whether sickness should be compensated for under a compulsory scheme or whether the agencies for sick benefits should rest upon voluntary action by employers and employees. It is not my purpose to-day to enter into an analysis of this question. I desire to emphasize, however, that at the very basis of the entire discussion was the united opinion that the real problem of sickness in industry was to prevent the preventable diseases.

The function and duty of employers to exercise not ordinary but supreme care to prevent occupational diseases is no longer an arguable or debatable question. It is a duty which is self-evident and inherent in the relation existing between employer and employee. I go so far as to say it is a primary duty. It cannot be avoided by the employer seeking to place upon society or established medical agencies the burden of this responsibility. The obligation rests upon industry. The execution of the dutty is, of course, upon not only employers but also employees. But it is the manifest duty first for employers to study the most approved schemes of hygienic prevention, adopt such devices, and then see to it that the employees understand fully their part in systematic preventive co-operation. Health is a factor in production, and healthy industry will produce wholesome products. An unhealthful plant has no place in our industrial State. Not only is the obligation, to which I allude, a moral and social duty, but soon it will become a statutory mandate. The Massachusetts Workmen's Compensation Act supposedly referred to compensation arising out of physical accidents; but the Supreme Court of the State of Massachusetts has interpreted the statute and has extended the principle of compensation to industrial injuries arising out of occupational diseases. So that in the Commonwealth of Massachusetts, under its existing statute, a disease incurred in an industrial occupation is an injury, and as such comes within the operation of the compensation statutes. I welcome this interpretation of the statute. It is a narrow policy to limit adequate compensation to injuries arising out of accidents alone. Surely we are advancing far enough not to argue as to the particular kind of disability a worker must incur to be compensated, but to argue in favor of compensation for the worker if the cause of his injury arose out of his occupation. In Massachusetts, therefore, the liability is now statutory and judicial; but the principle in other States without statutory liability is none the less obligatory for adoption.

I regard the inquiry into the best means of preventing industrial diseases as the pressing problem of modern industry. We business men should be capable of evolving ways and means to carry into effect comprehensive schemes for preventive hygiene. Some of us do not favor the multiplicity of legislation with which industry is surrounded. I maintain that many measures now enforced by statute should have been made the basis of voluntary co-operation between employer and employee. Stated conversely, the greater industrial co-operation, the less industrial legislation. If men will do things voluntarily, which they ought to do for the upbuilding of industrial health and morality, coercive laws will disappear. I cannot emphasize this blunt fact too strongly.

To establish adequate health prevention in industry involves two distinct duties on the employer. First, his individual responsibility in his particular plant, factory or industry; secondly, his co-operation with local, State and national organizations whose activities are directed towards this beneficent result. Each of these obligations is inter-related, and each absolutely necessary. An employer who isolates or insulates himself from the industrial community, who does not give his time in a joint effort to evolve health procedure by conference with his brother employers, will surely fall short in his efforts. This is the underlying value and importance of the Conference, which is to be inaugurated in your wide-awake, public-spirited city. The presence of the Governor of the State of New York at your opening exercises lends official sanction to the tremendous effects of the problems which you are analyzing and studying. I do not enter into a discussion of the obvious loss and waste, through sickness in industry. Accurate statistics would undoubtedly thrill us with the tragedy of the social and economic wastage through occupational diseases, which undoubtedly could be prevented. I trust, therefore, that your deliberations will result in the greatest good and will receive the widespread attention of every man, woman and child interested in productive industry.

The National Association of Manufacturers in its work for compensation and prevention of industrial accidents, started with the theory that the first essential requirement to the furtherance of equitable conditions is a knowledge of the facts — all the facts, for half knowledge leads to wrong conclusions. To meet this requirement it made in 1910 a thorough study of foreign compensation systems, the conclusions of its commissioners being published in book form and given wide circulation among manufacturers, legislators and the general public. The next requirement, it was felt, was prompt action in line with sound conclusions.

Referring to the movement for industrial safety, voluntary systems of prevention and relief have been established by numerous American employers which compare favorably with European conditions, but on the whole the United States is far behind other civilized nations in these matters. For many years much time and attention at the board meetings of the National Association of Manufacturers have been given to the consideration of accident prevention and relief plans. In common with other humane agencies, the Association has felt that the economic loss due to accidents, enormous as it is, is as nothing compared with humane considerations. It has taken the stand, further, that prevention is even more important than compensation.

The safety campaign of the National Association of Manufacturers has been along these lines:

1. A strenuous campaign has been carried on in all the States for laws providing automatic compensation for injured workers or their dependents, and support has been given to all reasonable bills, as the Association realized that

a perfect and uniform workmen's compensation system for the whole United States can be secured only step by step.

2. Special efforts have been made to have manufacturers organize their own relief associations, preferably in co-operation with their workers, for the reason that such systems have most effectively reduced accident rates as well as industrial unrest.

3. Model workmen's compensation bills have been prepared and widely distributed. These bills are at present before the Legislatures of a number of States. While they cover the whole subject, the committee urged an especially strong educational campaign for the recognition of three essential principles in compensation legislation, viz.: that a good workmen's compensation law must encourage accident prevention; assure compensation, preferably by compulsory insurance; and cover all wage-workers. It also attempts to provide that doctors' and lawyers' fees shall not rob the injured.

Numerous employers and business men have, as a result of the Association's advice and practical work, engaged safety engineers for their factories. The campaign has so increased the demand for experts that the supply is inadequate and open letters have been written to engineering colleges urging them to establish a special course of training, leading to the degree of "safety engineer."

Local "safety revivals" have been conducted in many parts of the country, with some member of the Association's Committee for Accident Prevention and Workmen's Compensation present as principal speaker, and the subject of safety museums has been constantly agitated. A special effort has been made to get in touch with factory inspectors and to urge the keeping of statistics bearing upon accidents.

A colored "safety" supplement has been established for *American Industries*, the official monthly magazine of the Association. The interest of the members in this safety supplement is shown by the fact that 5,000 extra copies were ordered after the supplement's first appearance. Another effective means of educating for safety is the use of motion pictures, which have been prepared partly at the expense of the National Association of Manufacturers. These are distributed through regular motion picture channels all over the United States. Several thousand lantern slides are being used for educational lectures before the general public, interested organizations, and college classes.

Every phase of the Association's work is being supervised by members of the Committee for Accident Prevention and Workmen's Compensation. Although the Committee's efforts are a work of love, the members receiving no compensation whatever, the Association's activity for workmen's compensation and accident prevention has cost approximately $50,000 during the last few years. The Board of Directors consider this money well spent, and judging by present sentiment will not only continue but increase their efforts in future. Perhaps the best sign of the success of this safety campaign is the mass of enthusiastic testimonials from Association members to the value of its expert's inspection and advice. The following will, however, at least give some idea of concrete results:

Several hundred members of the Association have placed a special man in charge of their shop safety organization. Scores of manufacturers claim to have reduced their accidents in a campaign of from one to two years from 10 per cent to 50 per cent.

The safety campaign has brought about a better appreciation of general efforts in the direction of sanitation and welfare work. Twenty or more establishments have established sickness insurance in co-operation with their employees, as part of their safety campaign. A dozen or more mutual insurance and relief associations have been established among certain classes of manufacturers, and accident prevention is invariably one of the most important, permanent features of such mutual organizations.

About three years ago several of the Association of Manufacturers felt that still better and broader work could be accomplished by a conference board composed of delegates from several associations of employers. And it has been my good fortune during this period to be a member of the Conference Board of Safety and Sanitation, composed of delegates of the National Association of Manufacturers, the National Founders' Association, the National Metal Trades Association, and the National Electric Light Association. During this period, this Conference Board, with the assistance and advice of experienced engineers have studied, originated and experimented on a large scale with the best theoretical skill to be obtained and the largest field of practical experiment, not only to secure practical safety devices, but the best method of inculcating the spirit of caution, that indispensable psychological safeguard which is superior to every form of mechanical precaution. During the period of our joint effort the Board has adopted and standardized a wide variety of devices. Its activity has extended to experiment with such necessary but small things as foundry leggings and safe foundry shoes, and it has been successful, we believe, in not only securing the manufacture of a superior shoe for foundry work, but arranging for its production so that workers may practically secure it at cost. These are only two items in a considerable list of devices and conveniences which have originated with this Conference Board, to prevent accidents, and, in case of accidents, to provide the quickest method of applying first aid and thus reducing the period of suffering. This Conference Board also issues a monthly booklet entitled "The Spirit of Caution," endeavoring to educate both employers and employees to the end that accidents in many cases can be prevented, as well as to educate in the care of the unfortunate one who meets with the accident. It was the effort of this Board which secured for it the statement found in the Majority Report of the Federal Commission on Industrial Relations that it was one of the "three great private associations * * * which are doing as much or more for safety than all the State and Federal Governments combined."

I believe there is a new era in American industry. I share deeply and earnestly in the recent utterance of President Wilson, expressing his hope in the obliteration of class consciousness in our nation. The future has too much in store for us to waste our time, thought and energies in profitless strife and barren contentions. Never in our political and industrial history was the necessity for united and concerted enterprise more imperative than now. The new era means common purposes and united impulses for all engaged in our varied industries. If employers and employees cannot stake out a common ground upon which to assemble and understand each other better, we shall be unworthy of the priceless opportunity now before us. The new era implies less insistence upon private rights; greater insistence upon public duty. It means translating our industrial forces into a spirit of toleration and mutuality. The new era is the golden rule applied to all men and women who work in American industry. It is in this spirit of enterprise, enlightenment and progress that the National Association of Manufacturers is attempting to be of service in the up-building of our industry. For, the sovereignty of manhood and womanhood is the basis of industrial nobility.

Gatherings like this contribute much to the sum of our knowledge upon these ever-important topics. They are long steps in the way of social progress, and they are not the less valuable because they impress us with the complexity as well as the importance of our social problems. I feel that each of us will depart from this gathering debtors to the research and experience that has been so generously contributed to this Conference.

COMMISSIONER LYNCH: We had fully expected to have Mr. Gompers, President of the American Federation of Labor, with us, but he has not arrived as yet. He expressed some doubt of his ability to be here, but his last letter said he then hoped to make the trip. He may come in yet, and we trust he will.

We will now have the Attitude of New York Organized Industry toward the Safety Movement, by Mr. E. J. Barcalo, President, Associated Manufacturers and Merchants of New York State.

THE ATTITUDE OF NEW YORK ORGANIZED INDUSTRY TOWARD THE SAFETY MOVEMENT

By EDWARD J. BARCALO, PRESIDENT, ASSOCIATED MANUFACTURERS AND MERCHANTS OF NEW YORK STATE

Perhaps you will permit me, before I start to speak or to read, to remind a few of the gentleman especially that I see here that I am occupying a pulpit. And there is no objection to the proclamation. Organized industry and industry properly organized endorses earnestly and wholeheartedly, and I think without particular reservation, the safety movement. And while I may occasionally refer to those things that would indicate that we were looking out for the economics of the thing, I want you to understand that we do not place the dollar above the man. Sometimes we are rather misunderstood because we make certain suggestions which have an economic side, and therein sometimes we suffer.

I presume one could go through the State and find a few who object to safety requirements. I cannot say that they are of no account, because when something happens in their establishments the results are visited upon the heads of industry as a whole. This is most unfortunate and most unfair, both as to employers and as to administrators of factory laws.

There are two reasons which move industry to the endorsement of the safety movement; first, Humanitarian, and second, Economic.

I am going to claim for managers of industries just as much of feeling as is possessed by other mortals. Almost all of present day managers have "done their bit" in the works, and as they have climbed the ladder they have not left behind all feeling for their fellows.

We must realize and recognize that in all things we have all advanced to a new height, and from this height we contemplate our responsibilities. We have thrown off the old, and put on the new. The old "assumption of risk" defense and the contention of "contributory negligence," sound rather heartless today, but they were recognized as proper defenses for many long years. War, fifty years ago, was looked upon as something inevitable, or to be borne when upon us. Today while we are far enough along in civilization to want to prevent wars, we do not hold the heroes of past wars to be criminals.

Managers have in recent years taken a different attitude toward the safety movement, and the very change in attitude, in the eyes of the pubic, almost convicts them of gross negligence. But I dare advance for employers the claim that their first reason for supporting the safety movement is to save lives and prevent injury and illness to their fellows.

The first object of work and effort is the production or securing of individual and family necessities. Out of this the years have developed what we call the industries, and as the idea has further developed toward volume and profit, it has been thought that the welfare of the worker has been lost sight of.

In our home lives we demand, and have, improved living conditions, but we do not condemn ourselves for past content with the things the past afforded. In the same way does the employer feel about his past attitude toward safety methods and general shop conditions. This is the view we would like to have the public take and the view they should take. Managers will accept all the criticism that should be meted out to them if only they be given credit where credit is due. It is by honest criticism that we progress, while unwarranted criticism retards.

Sometimes the employer is entirely misunderstood and his objections to certain proposals place him, in the eyes of many, in the position of a reactionary, if not in the class of those opposed to humanitarian principles, while his position as a matter of fact is predicated upon an experience which should not be ignored.

It is said that in a neighboring State the employer has been denied representation on a commission whose duty it is to investigate certain phases of employment. This is directly opposed to the attitude and practice of the Governor of our State, who brings together all parties in interest; and the idea is in opposition as well to what I trust is now the fixed practice of those in this State most directly interested in these matters — that of getting together to work out the solution of their own problems.

I believe it safe to say that if the so-called labor laws of the State were wiped off the statute books a great majority of industries would go right ahead with their plans which have to do with the development of safety practices, and especially would this apply to the most successful industries. This is a broad statement, but I believe it, because the requirements of today are but the voluntary practices of many industries preceding the labor laws, and upon which practice most of the labor laws are based.

This leads to the economic phase of the subject.

An under-heated factory in the winter months; a poorly lighted factory; the use of obsolete machinery and inferior equipment generally, are impossible today if success is to be obtained and maintained. And above all, and beyond all, is the necessity for a competent force.

Employers know today, as they never knew before, what good men mean to them, and they know too, that wages, while important, are not all there is to the problem. My own observation is that peace and contentment and a sense of safety and security — personal and family — are among the chief factors. The securing of these things is in the hands of employers solely, and because they have come to know their value there need be no laws to bring about the necessary changes so far as a majority of the requirements are concerned.

Among five hundred manufacturers there will be some either obstinate or indifferent, and it is also beyond dispute that among five hundred employees there will be the obstinate and indifferent — indifferent even as to their own personal safety, and herein lie some of the causes of discouragement.

Men will deliberately disregard instructions given for their own personal safety; will remove guards and even destroy them, though much of the trouble is due to the carelessness which all of us possess to some degree.

There must be some reasonable punishment provided for such cases, just as there is punishment provided under the law for failure to provide guards, and as in the matter of insurance, a penalty is provided in a form of increased cost. Not only should there be the same incentive for the one to use that there is for the other to provide, but there should be like punishment for failure to supply and use.

In the enthusiasm of the moment we are all likely to go to some extreme. Some of the safety requirements are extreme. No unnecessary system of guarding belts and gears should be required, and especially if by so doing, proper lighting is interfered with. Just such conditions are found, and it is not strange, perhaps, that the destruction or non-use of guards is greatest in such cases. This is neither the fault of the employer or employee, and experience no doubt will bring the needed changes.

Given reasonable security in a physical way as a basis, education of employees in safety practices will be the most powerful factor in the prevention of injury and illness in industry. And education, in this connection, will include the use of one accident, or the result of it, as a means of preventing a similar injury.

Starting at the top, with one both capable and sympathetic, the influence can be extended to the very last man. The published educational plan of our Industrial Commission deserves the greatest study and application and that it has been appreciated is shown by the many voluntary expressions from managers.

These very meetings are worthy of our support and it may be that the suggestion of the secretary of the Association, for whom I assume to speak, that employers send men from the ranks to these meetings, will bear fruit another year, for the enthusiasm and influence and example of a few men work wonders. I recall a statement of Mr. Price, that the tabulated accidents of a given month showed that something like seventy per cent could not have well been prevented by more physical guards, but could have been prevented by thorough-going educational effort, and I believe these figures to be largely borne out by other testimony, certainly if the word " education " be used in its best sense.

I have the greatest faith in co-operation and co-operative effort — and in the results of co-operation. Men band themselves together for all sorts of purposes, and they come together from great distances. In this state we go so far as to bring employer and employee together, through their representatives, to discuss proposed legislation affecting their common interests, and with a degree of success that is encouraging, therefore why should not employer and employee in a factory work together to save lives and promote health?

The very economy of the safety movement should inspire the employer. If it costs forty-five dollars to train a new man for the average job, it is much cheaper when possible, to prevent an injury which may incapacitate an employee, and surely much better for the man.

Further, it is just naturally human for a man to want to work where conditions are the best, where employment is safest and where peace of mind is assured, and this all tends toward a selected force.

There is also this to be said. The employee and the public should not assume that an effort to change conditions or requirements is necessarily an attempt to bring standards down below the point of safety. We have referred to the unnecessary guarding of parts of certain machines, when the guards themselves increase the hazards. In nearly every such case the condition has been brought to the employer's attention by the users of the machines, either by word of mouth or by the repeated removal of the guards. Therefore when the employer suggests a change it should be received as a contribution toward the problem of making the requirements ideal, and be properly considered and not be opposed because it is an employer's suggestion. Neither the employer, nor the public, nor the State should impose an unreasonable requirement, and for that matter, no unreasonable restriction or expense should be suggested.

Endorsement of these meetings has been given and it may be that it would be well for the State to undertake to maintain, under the supervision of the Industrial Commission, quarters for the display of safety devices, on the lines of the American Museum of Safety, and let the display or listing of devices and practices mean an acceptance or endorsement. An employer would then know what is standard and what is acceptable and advisable. He would also save time, effort and money now very frequently wasted in making experiments. Almost every industry would willingly place its experience at the disposal of the State and in safety matters at the disposal of industry in general.

Industry endorses the safety movement whole-heartedly.

COMMISSIONER LYNCH: The next speaker is Mr. James P. Holland, President of the New York State Federation of Labor, and his subject is the Attitude of New York Organized Labor toward the Safety Movement.

THE ATTITUDE OF NEW YORK ORGANIZED LABOR TOWARD THE SAFETY MOVEMENT

By JAMES P. HOLLAND, PRESIDENT, NEW YORK STATE FEDERATION OF LABOR

A few seconds ago, Mr. Barcalo in speaking to me, wanted to know why the audience had such solemn faces. I said it was because we were in a church.

I am very glad to be here both in my representative capacity and as an individual. The purpose that actuates this Congress has inspired much of the work of the New York State Federation of Labor, and we recognize in this assemblage and discussion a bringing together and an exposition of thoughtful forces that will find and follow a way which will lead to a reduction of the physical distress and loss that attend the processes of modern industry.

The attitude of organized labor of this state toward safety in the workshop and elsewhere, for the life, limb and health of wage workers is abundantly expressed in the many undertakings for that purpose advocated, initiated and accomplished by the New York State Federation of Labor during its more than half a century of existence.

To recount these instances of past endeavor would take us step by step back down to an era when any consideration for the physical welfare of wage workers was classified as " molly coddling."

To illustrate the upward journey it will be sufficient to recall that sanitation in workshops and mines and medical supervision of tunnel workers were born in the legislative demands of organized labor, as were also safe scaffolding, expert handling and safe storage of explosives used in industry, systems to remove from work places toxic gases and disease breeding dust, the prohibition of women and children in enumerated dangerous employments, fire exits, fire escapes and fire drills in factories, safety couplers and brakes for railroads, vestibules on street cars, abolition of the pestilent sweat-shops, creating one day of rest in seven, regulating the working hours of women and minors, prohibiting the locking of factory work-room doors, safeguarding belting, shafting and moving machinery, and the raising of the age and school requirements of children employed in industry.

Our deep and abiding interest in employers' liability for negligence and in the Workmen's Compensation Act is rooted not in the benefits they provide for the injured but in the wholesome conviction that these statutory enactments will impel a real effort to prevent industrial accidents by investigating and reducing to a minimum the causes that produced them.

In furtherance of this object and to more effectually direct these preventive endeavors, we have decided to renew our demands on the lawmakers at the coming session that sickness or disease caused wholly or partly by conditions of employment shall be compensated for as are accidental injuries. In supplement to this movement, we have established a commission to inquire into health insurance and the prevention of sickness among our members in this state by broadening the social activities of our affiliated unions.

In this work of preventing injuries and ill health by the discovery and use of safeguards, we are seeking the co-operation of our employers, and we seek that co-operation because we know it is necessary if we are to get results worth striving for. The basis of this co-operation is simply mutual welfare and its benefit to society.

We would ask the employers to consult with their employees in the preparation of shop rules out of their combined experience and mutual interest that will search out and correct preventable hazards. We know that shop accidents are caused by careless fellow workers and by careless foremen and employers. We know that shop conditions are created or continued from ignorance of health principles on both sides that produce preventable illness. Let us then attack the evil by getting together in an enterprise that can but only help both. These rules so made, in view of their purpose, should be vigorously enforced without fear or favor in the higher interest of all.

One of the causes of workshop hazard to life and limb is the growing custom of substituting half skilled apprentices for fully skilled craftsmen on a rush job. When the job must be completed in the time limit every "botch" looks like a journeyman to the employer.

As the competency of a craftsman is nearly always determined by the boss or foreman employing him, and paying him the wage scale, and saying they are satisfied with his work, the Union of the trade cannot deny him, and thus every time there are rush jobs there is an addition to the trade ranks of half-trained apprentices masquerading as journeymen. These unfortunates are a constant source of shop accidents. Our remedy is a completed apprenticeship with every added advantage that our school system affords. To this we invite the attention and co-operation of our employers.

Every accomplished effort of the organized labor forces of this State to improve the condition of the wage workers at home and at work is radiated to the unorganized as well as the organized. We must be relieved at once of selfish interest in the causes we espouse. We cannot work for ourselves alone, nor do we desire to. We thoroughly believe that the shop and home welfare of a wage earner is best promoted by the inherent advantages of labor organizations, and that such welfare could be most immediately gained by complete compact organization of all wage earners. But as that devoutly desired consummation is not yet attained, we must work with the tools at hand. The organized wage earner is accustomed to voluntary discipline and influences shop conditions considerably, and this influence steadily increases workshop safety. The unorganized have no influence on shop conditions and therefore are absolved from all blame. The blame is transferred in full to the account of their employers who accept it by encouraging and unduly profiting from such lack of intelligent combination. The organized wageworker is the only one equipped with power to require remedial revision of workshop conditions, and this power he uses to conserve his welfare consistent with the ultimate welfare of the establishment. When the ultimate welfare of a minority of establishments threatens the security of all, the organized worker then seeks to impose like conditions on all of them. It is at this stage that all, organized and unorganized, come in to the full benefit of the improvement. Sometimes it is accomplished by a strike, by a general trade agreement, or by a primitive law. The worth of the accomplishment, no matter how brought into effect, is tested by the fact that no one has ever yet offered to substitute the old order for the new. It has been accepted as good, in practice, however it might have been denied in theory. This proves that the wage earner is a good counselor in the things that sharply affect his industrial condition, and that the sensible employer and his employees can, without the bridge of industrial dispute or legal regulation, meet in common and adjust shop conditions to the best interest of both. To this form of co-operation, the State Federation of Labor and all of its affiliated unions invite cordially every employer of labor in the State of New York. It is a time honored and familiar slogan of ours that "an injury to one is the concern of all." I am glad to be living in the day that gives a new and wider meaning to these words, and to realize that so many who have made their names stand for large deeds and high ideals in all departments of our national life are drawn together by the worthiness of the object here set to be attained. It is an assurance of sincere quest of its fulfillment.

To you I bring the offered help of the State Federation of Labor and its affiliation throughout the State. It will be purposeful help. It comes from those who have measured every developed ill and injury of industrial hazard with attempted relief and remedy. We have built health insurance and pension systems and private hospitals in our attempt to care for the maimed and sick of industry, and we have haunted legislative halls with measures designed to correct industrial conditions that we knew caused this lengthening list of casualties.

The system of factory and mine inspection in this State had its origin and development in these legislative measures, and the present great State Department of the Industrial Commission has been built largely out of the effort of the workers to lessen the hazards of employment. And yet the accidents in this state are thousands a day and the sickness robs wage-earners of many days of employment annually and loads them with corroding debt. It is a discouraging picture. From it we hopefully turn to contemplate the prospect opened up here, and to its realization of industrial safety for the hosts of wage-workers it represents, the New York State Federation of Labor earnestly dedicates all of the service it can give.

In conclusion permit me to suggest for your consideration that a great deal of knowledge on this subject could be diffused among the people by providing for yearly meetings of this Congress in the different industrial centers of the State.

COMMISSIONER LYNCH: It has been suggested that the attendants who have not as yet registered should not fail to do so, so they may secure copies of the proceedings of the Congress later, and also give to the Industrial Commission and the committee in charge a correct and complete list of the attendants at this congress. Register at the Onondaga Hotel. I want to call your attention to the program of this evening. The presiding officer will be Miss Gertrude Breckinridge Beeks, New York, Director of the Welfare Department of the National Civic Federation, and the general topic will be Women in Industry. A number of these addresses will be illustrated by moving pictures, at 8 o'clock in this auditorium. Tomorrow morning at 9:30 o'clock in this auditorium will be Machinery Day, and then I presume the real fun and interest of the Congress will begin because all of the attendance will have an opportunity to participate in a discussion of the subject for that day, beginning tomorrow. So that the solemn appearance that Mr. Holland complained of will have no place in the proceedings after today.

MONDAY EVENING, DECEMBER 12

PRESIDING OFFICER: MISS GERTRUDE BRECKINRIDGE BEEKS, DIRECTOR WELFARE DEPARTMENT, NATIONAL CIVIC FEDERATION

MISS BEEKS: In view of the fact that we have a very long program tonight, we are going to begin on schedule time, and hope that we may finish without tiring you.

The evening program upon "Women in Industry," was, through the courteous request of the Industrial Commission of New York State, arranged by and under the auspices of the Welfare Department of the National Civic Federation because the latter caused to be placed before the Commission for its consideration the question:

Do women wage-earners present any special problem in accident prevention and the conservation of health as distinguished from that involved in safeguarding workmen?

In developing the program it became apparent that the welfare of both sexes in its relation to the prevention of industrial accidents and of occupational disease is, in some respects, interwoven, and that in others of comparatively minor importance, it is distinct.

The whole program of Welfare Work, which includes sanitation with accident prevention as a part, recreation, industrial training, housing and industrial insurance, is a vital necessity in the conservation of health; all provided by the employer as something in addition to equitable wagès and reasonable hours. The relation of the home to health is well illustrated by the increase of diseases due to crowded living conditions. Body contact is the greatest disseminator of contagious diseases, hence the obligation of the employer to provide proper homes.

Woman as the home-maker holds a supreme position as it affects society. Starting from that point, fundamental in the protection of American institutions, we find proof in the films shown by Mr. Marcus A. Dow, of the New York Central lines, that her poorly prepared breakfast, ill-health and ill-temper, and the consequent marital quarrel, are responsible for a mental depression and anxiety so distracting as to result in inattention to duties and serious accident to the wage-earning husband. Various other intricate home influences are of far-reaching importance.

Surmounting all comes the vital necessity of an adequate wage. It makes marriage and the establishment of the home possible. This is evidenced today where seemingly abnormal wages are paid in the manufacture of war products and others. We are to be congratulated upon the fact that such rises in wages have taken many women from industry. It is only in the low wage industries that workmen send their wives and daughters into our shops and factories. Thèrefore, the preservation of the home and resultant health of the workmen, which health is the greatest accident preventive device, is of paramount importance.

There is authority for the statement that the greatest number of accidents come where health is subnormal. Then, as one means of promoting physical soundness, an adequate wage for working women is likewise of vital importance.

In spite of the fact that the present scarcity of women's labor is partly due to an increase in marriages of an uncertain number of highly paid workmen, the increase in employment of women both married and unmarried, is so appalling even in the United States — not yet a belligerent party to the great war — that it behooves the state to take cognizance actively of the status of women in industry.

Notwithstanding what may be said to the contrary by our so-called feminist enthusiasts, mostly leisure women, it is not possible for woman to be a home-maker, child bearer, and industrial worker at one and the same time. To perform her great function to society without impairment of her own health and that of her progeny should be made possible by some safeguard devised by the State.

We know nothing to-day about the rate of births of sub-normal children due to strain upon our young women in tender years while in industry. Even though marriage comes to the average after five years of employment, three years in some industries, the effect of those few years may be destructive in its relation to the welfare of our nation. We are told that one race, that of the Russian Jews, does not send its wives into industry, and that the infant mortality rate is strikingly low as compared to the Italian which does encourage its wives to work.

That there is a certain amount of community benefit derived from the employment of women before marriage is apparent. Working under healthful conditions provided by the humane employer who takes an interest in adding training in domestic science to his welfare activities, the discipline of industry not only is productive in character building but so broadens the mental outlook as to make the future home maker more considerate of the tired life partner upon his return from the day's work.

The influence of early occupation upon home life, then, makes it imperative that all the safeguards in industry that are humanly possible should be thrown about our working girls. The short work day and its relation to fatigue is a vital factor no less important than the diminution of night work. Fatigue from industrial strain may be lasting in its effect. It may partly be prevented by furnishing the two greatest essentials, physiologically, to human welfare, namely, air and drinking water. Next comes seats for women, even though they may be holding so-called walking jobs; and the Welfare Department of the Civic Federation can tell you how to solve that as well as other similar problems. The anatomy of woman is such that one day off a month to afford relaxation at a delicate time is enduring in its good effects upon health. As petty as it may seem, there is evidence to prove that provision in the sanitary room of a place to comb hair may prevent accident, as, for instance, the young woman, who, because there is no other way, breaks the rule against it and dresses her hair in the workroom, with the result that it is caught in the shafting and she is scalped. The providing of caps to keep the hair from flying about is a necessity for the woman worker especially to be observed in connection with sewing machines where she may lean down to pick up something and have her hair caught in the shafting underneath. In this connection, woman's dress is a peculiar hazard as represented by flowing skirts and loose jumpers.

In spite of the handicaps surrounding women in industry, as an optimistic note, attention must be called to testimony to the effect that men are injured three times as frequently as women where the risks are the same, partly because women are more alert and they take fewer chances. On the other hand, another instance may be quoted to indicate that the sickness experience of one group of employees shows that it is twice as great for the weaker sex than the stronger. As to both, under workmen's compensation legislation, it can be shown that for both sexes, fatigue is the greatest element in industrial accidents.

That safeguarding is being widely promoted by employers is indicated by the exhibits of various organizations here. It is a matter of regret that we could not bring to you all those of New York State to be found in the Civic Federation's permanent welfare exhibit on the 35th floor of the Metropolitan Tower, New York City, open to all who desire to profit by these fine examples.

At the International Conference of Industrial Accident Boards in Washington last week, it was authoritatively stated that fifty per cent of the industrial accidents are preventable — some claiming seventy-five per cent; that merit rating in workmen's compensation insurance is not yet feasible, because not enough prevention work is done; and that England's experience has shown that we can reduce our accidents one-third. The means to be employed, whether it be adequate light to make plain dangerous work places, health measures, or education of the workers in caution, are of equal interest to women wage-earners and workmen.

It now gives me great pleasure to ask for a word of greeting from Miss Beard, who is President of the Consumers' League of New York State.

MISS EMMA B. BEARD: Because of the organization which I represent, I am specially glad to give you this word of greeting tonight. I think it is a matter of congratulation for all of us that our Industrial Commission, in planning its first Congress, which was at first to have been merely a Safety Congress, had the larger vision, and has resulted in this present Industrial Congress, which has taken up not only the matter of safety as it relates to our compensation law, but also the broader view, such as lighting, heating and ventilation; and what is possibly the very greatest question in modern industry that of the woman at work; and I am sure you feel with us that it is a very hopeful sign of the times that we have thus come together, and that we all very earnestly hope that this will be but the first of many of such conferences, when both employers and workers, and you and I who represent the public, can come together and understand these problems and better understand each other with the working out of the problems.

MISS BEEKS: We hear much today of the tenure of office of public officials and all that; and I want to urge upon you the necessity of supporting our officers in this Commission and helping them instead of offering too much criticism.

The next one who has a paper to present is Dr. Lucy Bannister. In introducing her, I would like to say that my first acquaintance with Dr. Bannister was had in visiting the factory to look into the condition of the wage earners, and found this splendid woman in the practice of medicine in that connection. One of her earliest problems was to find out why there was such a shortage of labor during the summer season; and it was no uncommon thing for her to learn that ice cream was the breakfast diet. By improving the diet of the young women she was able to improve health to such an extent that a full complement of the force was there constantly even in that difficult period; especially difficult in her industry, because of the use of the gas jet at that time in molding the glass for bulbs, which made it imperative to keep the shades down so that the gas might be observed by the eye, and that, of course, prevented the air from coming in. You can imagine that she had quite a problem. Dr. Bannister was announced to speak upon the "Relation of Health to Safety;" as she works in a very noisy plant, it seems that my telephone message miscarried, and, therefore, Dr. Bannister will speak upon a slightly different subject. Dr. Bannister herself will present the paper.

WOMAN IN INDUSTRY

By DR. LUCY A. BANNISTER, WESTINGHOUSE LAMP COMPANY

The above title would suggest to the thoughtful mind a large subject, in fact it is so many sided and we can look at it from so many different aspects one scarcely knows where to begin. However, in this paper we have decided to emphasize the phase we are most interested in, because from a business point of view, in our opinion, it presents some serious difficulties. We shall take therefore, for our special consideration those women whose ages range from 16 to 20 years. You may call them girls if you prefer, but a girl of 16 beginning industrial life finds she has to be something of a woman if she intends to succeed.

It is a critical period for her, and the time when she most needs the assistance necessary to develop a useful womanhood. But she can not find her level, industrially speaking, until she has been given an opportunity to prove herself, which ought to come with her first position in the form of a careful training in that branch of work she is expected to perform. We shall refer to this again later so will leave it for the present to preface our discussion by looking backward a little. I now have in mind "Woman in Industry" before the Industrial Revolution. Their sphere was much narrower than ours is today, but they played their part well, first in the home and later in the factory, and when the Industrial Revolution came it found many well trained and serious minded workers among the women, because much of the work they had been doing, spinning, and weaving for instance, were only transferred from the home to the factory on account of the invention of new machinery, which made larger production possible, increased trade, and gave employment to many women and children. In regard to the latter we shall have nothing to say in this paper. Of course, in the first quarter of the twentieth century no serious minded men or women approved of child labor, but our colonial ancestors encouraged the employment of children, though they were both kind and generous, according to their times, and we can not blame them for not having the light of today which has been given to us. And again we shall not say anything about the long hours and many hardships of factory workers in those days; they belonged to another period and were a concomitant part of a developing system. But we can not help noticing the importance our colonial friends seemed to attach to a careful training of those who were expected to engage in the manufacturing industry.

As early as the latter half of the eighteenth century spinning schools were formed for the free education of the children of the poor with a view of furthering the cloth industry, and to increase the family income. There is no lack of evidence to show that it was regarded as a public duty in the colony of Massachusetts to provide for the training of children, not only in learning, but in the words of one of the old court orders,—"Labor and other employments which may be profitable to the commonwealth."

It is noteworthy that in those days they seemed to have given much thought and made considerable effort to develop useful and industrious communities.

I believe that most of our failures in regard to operatives are due to lack of effort, or ability to properly develop the material that presents itself for our consideration: Of course, there is some impossible material, but the bulk of it might be turned to good account with careful training, other things being equal, wages, environment, etc. It is a waste of time, however, to try to make an efficient worker out of a girl if she feels from the beginning that she is not going to make a living wage. The size of the pay envelope must be kept in mind if you want efficiency. It may be the operative's fault sometimes that her pay envelope is small, in which case it is the duty of her superior to show her how to increase it by more effective work. I do not mean to put the worker under a greater strain; that is not necessary if the *rate*, the *work* and the *worker* are well adjusted in relation to each other.

It is said of the girls of today, that they have no definite point of interest, no object in life, other than pleasure and to live from day to day, with no thought of the future. Many of them, however, have character and ability, but lack the environment to develop it. Why not give it to them when they come to us? It would, I am sure, be our gain in the long run.

I consider that one of the great industrial problems of today, is how to instruct and develop our new untrained young women workers, so that in the shortest possible time, with the expenditure of a minimum amount of energy on the part of the operative, we may give the maximum efficiency to the employer.

In producing this effect, we must remember, that conservation of human energy is essential where continued application is required and expected, as it is not a good business policy to use up your material, which is sometimes done, faster than you can make it. I have known young women to give up remunerative employment because their vitality had been too severely drained, or the kind of work they were doing had become distasteful to them. Careful supervision ought *not* to let this occur very often, as it is not a paying proposition to a business organization. It costs money to make a good worker.

In industrial establishments where the work is for the most part skilled, and inexperience or carelessness involves considerable loss of material and time, which means money, operatives should be selected with intelligent care and discrimination: *first*, as to their physical fitness for work of any kind; *second*, careful selection in regard to ability and aptitude; *third*, intelligent assignment of labor; *fourth*, thorough and interesting instruction; *fifth*, a careful follow-up system.

Physical fitness. I consider physical fitness the first essential, as without it no headway can be made. The only way we can determine this is by a physical examination. It not only helps the weak by giving them confidence whenever possible, but it sometimes gives backbone to the strong by encouraging them. They may not have known just how well they were before that examination. Some of them do not, and it would undoubtedly give the management a better idea of what they might reasonably expect from an efficiency point of view.

Careful selection is next in order. The general appearance, manners, degree of intelligence and previous training would be noted and aid materially in what comes next.

Intelligent assignment of labor. There is no use trying to make a square peg fit into a round hole, which is practically what is being done when we indiscriminately hire new workers. Sometimes it takes a prolonged conversation to find out what their mental attitude is toward the employment you have to offer them, but it saves time in the end to clear this up before you engage them. Having done this, assign the proposed operative to the kind of work she is most likely to be successful with.

After you have done all this, she may go out at noontime for lunch on the day she is hired and not return, notwithstanding the fact, that before going she has told her foreman or forewoman, as the case may be, that she liked the work very much and was satisfied with her rate of pay. Just why they do this, I do not know, *I* only state it as a fact and though it sounds rather discouraging, it is not so bad as it seems, for many of them stay and become efficient workers, and as to those who leave so unceremoniously, we are sorry to lose them, but very thankful they have taken no more of our time, and try again with greater diligence.

Thorough and careful instruction. This, I think very important, in fact, it is in my opinion the keynote to success, and success in this instance is holding the new workers long enough to make them permanent operatives.

It is obsolete and old-fashioned nowadays to let a girl sit down to watch another girl, expecting to make an efficient worker by the watching process. It cannot be done, because the girl's interest is not engaged in the work, she has too much time to watch the clock, and no opportunity for gaining confidence in the work before her, as confidence only comes by actually doing things. The girl's time of simply watching ought to be limited, let her watch and work and make whatever she is doing seem worth while to her, let her know that what she is engaged in has some definite end in view, make it connect with something interesting along the same line. Let the girl feel that she has a brain and is expected to use it, and she will grow more confident and self-respecting, and from a commercial point of view, will steadily increase in value to herself and those employing her.

When young girls go into commercial industry at the age of sixteen, whether they be native Americans or foreign born, they ought to be given by those employing them, reasonable opportunity for advancement along the line of the commercial activity they have chosen to occupy themselves with for the time being.

I know of no better way of beginning their career than by thorough instruction in their first work. This can be done individually or collectively in the form of a school, depending upon the size of the establishment and the kind of work done, and, as still further encouragement, let them see a little advancement in sight for honest effort through some well organized system of promotion. In my experience with girls and women, I have been impressed with the fact that few of them expect something for nothing, but most of them think long and faithful service ought to bring some reward; especially is this the case with those who have not had a very wide experience with the world. The worldly wise know that true merit and honest effort is not always openly rewarded, and content themselves with that inward consciousness of having done their best that helps one so well to sleep nights.

Follow-up system. We now come to a very important point, namely a warmhearted follow-up system managed by some one who does not regulate the pay envelope, or is too much interested in factory discipline. Of course this warmhearted creature directing the follow-up work, ought to be an intelligent woman of impartial judgment, and if her field of activity is large, she might have an assistant, one with a young simple life closely in touch with the type of girls her director desires to influence. The follow-up work would consist in making the girls feel at home, so to speak, in the workshop. We call it workshop because it is the place where we do our work. The manager's office is his workshop. The lawyer's office is his workshop when he is not in the courtroom. The same may be said of the doctor, etc. When a girl goes into a new place to work, we assume that she feels a little strange, and is quite willing to have some one show her where to place her hat and coat, and how to find the conveniences of the establishment which are placed there for her comfort, the welfare or service department for instance, the hospital, recreation room and where to eat her lunch. Someone to point out all the pleasant aspects of her surroundings, and help her slide lightly over the rough places, to visit her several times during the day at her work to see how she is getting along, and if there is a discouragement or grievance, to do all that is possible to adjust it, or, if matters seem too complicated, to bring the girl closer in touch with her superiors who can usually simplify matters and give things their proper proportions. In short, try to make her working days more of a family life. We cannot make them a kindergarten, however, and it is not necessary as the girl has left her school behind. She is now a woman in the business world, and comes to us, we assume, with an honest purpose, and we work together for our mutual benefit.

Many are the struggles and temptations of the working girl, and she battles with them bravely, and for the most part alone, and deserves our sympathetic encouragement in her struggle for existence. She ought to earn enough to live without continual pinching and have time left over at the end of the day for self-improvement or recreation. Give the girl time and enough money for her labor to grow up a woman and take her proper place in society. Have confidence in her, let her choose her own friends, and live her own life, but be ever ready to assist with advice when asked for, or if it seems necessary. It is not the business, in my opinion, of any industrial establishment, to interest itself in the creed, nationality or poltics of any of its employees after it has employed them. A business firm has a right to decide whom they shall employ, but the time for discrimination is before giving employment and not after employment has been given. Workers in an industrial establishment ought to be as brothers and sisters under the same roof as far as their work is concerned, and all co-operate to one end, that is, to turn out the best work possible along the line of their respective endeavors. Have no social differences, let all be equal in the works, and all lines of demarcation in regard to creed, nationality and politics ought to be left at the gate on entering the works in the morning, as they interfere with efficiency if taken inside the gate.

In conclusion, I would ask for all women in industry equal pay for equal work and equal opportunity where their field of usefulness is unnecessarily restricted. Men have grown so accustomed to regulating or rather placing a limitation on the natural ability of woman, mental and otherwise, that one might readily believe there was something in it, but there is not. They are only different as their sphere and training have been different. Give a woman the same environment and opportunity with the same reward for her labor and see what she will do. Treat her in business as one good man would treat another and see what would happen. Without some of the above inducements see what woman has done, in the past, and is doing today — not to be too serious about the past, I will quote something I read the other day handed down to us from colonial times — " Sewing and tailoring were standard occupations and were variously remunerated — one woman made 'Shirts for Indians' at eight pence each, and men's breeches for a shilling and six pence a pair, and in addition to this work of tailoring she taught school, did spinning and weaving for good pay, managed her own house, was twice married and had fourteen children." This we must admit is a fine record — this woman is an inspiration — she was a woman in industry, who did not neglect her domestic life, for she managed her own house and raised her children.

The women of today are self-evident not only in industry but in daring and courageous skill as exemplified by the name Ruth Law, one instance only where we have still to produce a man to reach her achievement. What are women doing today in the warring nations? Not only nursing the sick and soothing the dying, but taking the places of men while they are at the front. They have become munition makers, couriers, secret service agents, and in some countries we are told are fighting side by side with the men in the trenches.

This is essentially the age of woman, she is grasping her opportunities as never before, consequently, she expects more consideration from the world and those employing her, and she is worth it. Industrially speaking we must do our part. Let us give our young women in industry the advantage of a better industrial training and we shall have fewer disappointments, and for the future, a more efficient class of workers.

MISS BEEKS: Before introducing our next speaker, I want to say, that, in emphasizing the paramount importance of the home in my paper, it did not occur to me that I could possibly disagree with my colleague, Dr. Bannister; because, I do think that as soon as the war is over the women will scurry back to their homes just as fast as they can get there, if there are homes left for them. I have yet to find a woman in business who would not prefer to be in her own home.

Commissioner James M. Lynch, who has spent his life — one of self-sacrifice — in the interest of wage-earners, and is making even a greater one as a public officer, said in a general meeting of the Committee of Arrangements for this Conference, " Yes, let us have films and have arguments in them; " consequently, in our effort to please him, who has the interest of this Conference so much at heart, we have brought to you to-night one who knows all about the influence of the home upon accident prevention, Mr. Marcus A. Dow, of the New York Central lines, head of the safety department. The all-day grouch, which comes from a bad breakfast, I am sure will be presented to you upon that film.

It gives me the greatest pleasure to know that men are interested in women wage-earners and in the home as well as in accident prevention for men. Ladies and gentlemen, I introduce Mr. Dow.

THE RELATION OF THE HOME WOMAN TO SAFETY

By MARCUS A. DOW, GENERAL SAFETY AGENT, NEW YORK CENTRAL LINES

The problem of preventing accidents is to-day receiving the serious attention of thinking men and women in all sections of the country. A movement for greater safety has, within the past few years, swept like an avalanche across the continent, leaving in its wake a well-rooted determination in the hearts and minds of men and women to work unceasingly and constructively for the conservation of human life. I have been asked to say something as to the relation of the home woman to the Safety Movement. It is indeed a most important subject for discussion, and I doubt my ability to do justice to it. Women, indeed, and especially the women in the homes of industrial workers, can wield a mighty influence in the movement for accident prevention. No great movement for the good of all humanity ought really to succeed without the influence and support of women of the homes, because it is to permit the enjoyment of the comforts and blessings of that greatest of the world's institutions, the home, that humanitarian movements invariably develop and grow.

To determine the home woman's part in accident prevention, we must first consider the principal element which enters into accident prevention. Unquestionably, this is the human element, because experience has proven that the big majority of accidents are of a character which no mechanical safety device will prevent. In fact, the human element in accidents cannot be eliminated by all the mechanical safety devices that can ever be invented and applied.

Human beings are alike everywhere. Men and women become so accustomed to their surroundings that often practices which involve risk or injury are followed unthinkingly — automatically -- irresistibly. The human mind is so constantly occupied with things pertaining to the details of pleasure, business, or the perplexities of life, to the exclusion of all immediate surroundings, that something is needed to awaken that mind to a realization of what might happen to bring discomfort or actual suffering through certain acts of commission or omission. In other words, it would seem that there must in some way be put forth a constant reminder to sharpen the intellect; to act as a check; to hold up the mirror to the unpleasant realities of life caused by negligence — in other words, to make the human individual think of personal safety. As illustrating the human element in relation to accidents, let me cite one or two cases! In a certain factory, an employee stepped out of a doorway onto a track in front of a dummy engine used for conveying material from one part of the plant to another, and was struck by it and badly hurt. He depended upon an electric bell located in the doorway to warn him of the approach of that engine. On this occasion the bell failed to ring. It was an automatic contrivance which got out of order, as such things sometimes will. This man depended solely upon a mechanical contrivance to save his life, whereas, the simple precaution, taking hardly a second's time, of looking to the right and left before stepping on the track would have saved him. In another factory, a workman once slipped on a stairway and fell, sustaining an injury, and forthwith the management caused safety treads to be placed on the stairs to prevent slipping. Then, along came a man who carelessly overstepped one of the steps while descending, fell and broke his arm.

Now, such causes as these being the kind that produce most of the accidents to men in industry, what, you will ask, can the home woman do to prevent them? Undeniably, the cause of these accidents is carelessness. Can the influence of the home woman be wielded to eliminate this cause? Let us consider and see if there may not oftentimes be other causes leading up to and nourishing this one great cause — carelessness. Men may do careless things as a result of such contributing causes as lack of sleep, of the use of intoxicating drink, of insufficient, improper or too much food, of mental depression or worry, of lack of self-confidence, or of brooding, or of physical discomfort, and similar things.

A man who crosses a busy railroad yard, without looking to the right or left, oblivious to danger and as unconcerned as though he were in his own parlor, and is struck by an engine and killed, will be dismissed from our minds with the simple conclusion — "Too bad — but then it was his own fault — he was careless." But who knows where that man's mind was wandering when he forgot to look for that on-coming engine? Was he brooding over a quarrel he had at home before he started to work that morning? Was he worrying because members of his family demanded of him pleasures and privileges beyond his ability to pay for? Was his domestic happiness all that it could be, or was it the reverse? What was his state of mind, anyway? Certainly he was not thinking of his surroundings. Was he suffering from physical discomfort or a dulled mental condition due to a long habit of improper eating? Had he passed a night of restless wakefulness? These things are all within the range of not only possibility, but probability. I think it is unquestionably the fact that many accidents, due directly to thoughtlessness, may be traced to some such indirect cause as one of these.

We Americans are notably careless, not only in the matter of taking chances in dangerous places, but in our habits of living. It is well known that intoxicating drink will dull the senses, and the user of intoxicants is handicapped from the start when placed in surroundings where mental clarity is essential to personal safety. Therefore, abstinence from the use of alcoholic liquors is one of the first and most important of accident prevention rules. As yet, however, we have given but little, if any, consideration to the question as to how far clearness of mentality and power to think and use ordinary care may be impaired by unsuspected and neglected abnormal physical conditions due to a continuance of improper eating. I mean by that, a formed habit of overeating, or of eating irregularly, or of eating combinations of food that are chemically not proper to combine, and which, without question, produce inability to sleep restfully, and cause dullness of mentality and lack of physical tranquillity.

If this be a potent cause of carelessness, the remedy would seem to be of education in early youth. That physical and mental condition, commonly referred to as "that tired feeling," may not always be due to indulgence in intoxicants or other forms of intentional dissipation, and it is a matter worthy of consideration as to whether many of the 40,000 persons who are killed, and of the 2,000,000 who are injured in accidents in this country each year, due to apparent carelessness, are not in reality the victims of brain inactivity caused by an unwise or careless mode of living.

It is hardly to be presumed that either the women of the home, or the men themselves are, with one great sweep, going to correct these modes of living and feel perfectly fit and in the best of physical condition at all times. The thing that is necessary, therefore, is to so train the mind that the human individual will instinctively guard against unsafe practices regardless of any condition the mind may be in. Accident prevention training in early youth must be generally adopted and systematically carried on before we can ever expect to accomplish all that is possible in accident prevention. The weakest thing about our school system, it seems to me, is that it takes years of time and thousands of dollars in money to educate our boys and girls how to do useful things, and yet does not train them how to preserve that life which it has taken years to develop to a state of usefulness by teaching habits of carefulness, and by making accident prevention one of the first subjects for study in a school curriculum. Certainly, if the health and general welfare of the child are of sufficient importance to inaugurate systems for the examination and care of the eyes, teeth, lungs, etc., as is done in schools throughout the country to-day, it is of equal importance to take steps toward the preservation of the life and limb of that child by a systematic training in accident prevention.

This education, however, must in reality begin in the home, and here is a most important responsibility which rests upon the home woman, that of training the children so that in later life carefulness will be a habit which they will follow instinctively. When a man meets a woman of his acquaintance on the street, he instinctively lifts his hat. Our table manners are developed to an extent which causes us to instinctively say, "If you please" and "Thank you." These and many other things in our every day life are done sub-consciously, or even unconsciously, without any mental effort and regardless of the state of our physical or mental activity. When human beings are so trained in early youth that they will, in this same instinctive manner, look to the right and left before crossing a street, or a railroad yard, or will pick up the obstructions lying in the pathway in a shop, or will look down to the ground before alighting from a car to see where they are stepping, and instinctively perform many other little acts of carefulness each day, then, and not until then, will the great problem of accident prevention be solved.

To teach the present-day adult to refrain from unsafe practices is a tremendous task. It is like trying to strengthen a house when the foundation is weak. But if we can begin with children in the home, and not only in the home, but in the school, and train them from the beginning to avoid unsafe practices, and inculcate in their young minds habits of carefulness that will serve them through all the years of their lives, we will build a firm foundation for that new house — a future generation. And in good time we may look back upon our handiwork and say, " It is indeed a strong house — we have builded better than we knew."

And while the home woman thus needs to train the children to increase the safety of the future generation, she must also exert her gentle influence and persuasive ability to correct, as far as possible, the unsafe habits of adult members of her family and the harmful indirect causes of accident which may spring from either within or without the home. The woman who has a husband, whose work takes him to a railroad or a shop, or any place where hazard exists, should remember that the man is inspired by kind and loving words before starting to work, who is reminded by a loving warning to be careful when he leaves for his work, who has had the proper amount of sleep, and whose mind is one of happy, healty activity, stands a much better chance to return to that home from the shop or railroad yard with a whole body, than one whose ambition and senses have been dulled by quarrelsome words or by any of the mental or physical ills that an unthinking and indifferent woman of the home may have contributed to.

Let us, indeed, try to interest the woman of the home in this problem of life conservation, because, after all, it is her problem. She is the one to suffer the hardships and sorrows which accidental death and injury bring. She, more than all others, must pay the price which carelessness exacts of the bread-winning member of the family. Every effort must be made to interest her in the seriousness of this problem, because if she becomes interested, she can wield a might influence. She must show the husband, the father, the brother, that she is interested in his welfare, not only when he is at home, but during the hours he is absent at his daily work. She must question him as to his manner of working, and of the precautions he takes to avoid injury. She must make it her business to know whether her husband is careless at his work, and she must use her influence to make him careful. She must admonish him repeatedly not to take chances, and remind him of his duty to those dependent upon him to preserve his life for their comfort and happiness. It has been said that eternal vigilance is the price of safety, and assuredly, as far as the home woman is concerned, her vigilance must extend so far as to detect the slightest intimation of indifferent or careless habits of her husband, father, son or brother, and use her tact and ingenuity to cure them. Unconsciously, perhaps, the woman of the home is the power and the motive that is back of the safety movement. If she will but realize this and take an interest in the subject, show a disposition to co-operate in the manner suggested, as well as make the home life something worth being careful for, she will lend a great volume of strength to the movement, and she will do more than all else to help build up in this land of new ideals a wonderful, enduring structure of safety upon the firm foundation of a cultivated carefulness.

MISS BEEKS: Before showing the film which Mr. Dow has brought to us to-night, I shall say that we have every morning in the car of the New York Central lines at the station here in Syracuse the opportunity to show other films; and beginning to-morrow morning at a quarter to nine, if you are early risers, you will have the opportunity to observe some other films than those shown here to-night. It is barely possible, if your discussions are not too prolonged, that the program committee will decide also to add some which we have brought with us from the Welfare Department of the Civic Federation to the afternoon sessions. I am sure you will decide that woman's part in industry, even though she be not directly engaged in employment, is paramount when you have seen this extraordinary film.

It gives me pleasure now to announce a very concise speaker, who will show you how little a woman has to say — Mrs. Katherine Williamson, formerly first woman member of the State Factory Commission in Denver, Colorado, and the first woman factory inspector there. Mrs. Williamson is also a member of the Typographical Union. I have great pleasure in introducing Mrs. Williamson to you.

THE WORKING WOMAN'S POINT OF VIEW

By MRS. KATHERINE WILLIAMSON, Denver Typographical Union

It is indeed a pleasure to say a few words to such a unique assemblage as this.

Among us who are laboring for and urging a shorter workday, and things for the general uplift of women and children, we do not often have the opportunity of talking to those with whom we have friendly relations; they are usually talking to us; but now I have the advantage, because I shall talk to you and you will not be able to talk back at this time.

The welfare, health and happiness of women and children should be the first concern of every nation and state; and still we see in America, this most wonderful country, the wealthiest of any, among the most enlightened of people, and most generous and chivalrous of men, that the women and children, the most helpless, are the least protected. It is true that within the last year or two a law has been enacted that if enforced will give some relief. For years humanitarians have been compiling data dealing with the effects of fatigue and long hours in industry on the health of women and unborn children; and still in only a very few of the states have we seen any remedial legislation for these helpless ones. Women themselves are too timid to adopt what I think is the only plan that is practical in order that they may uplift themselves and benefit their condition in the way of sanitation, length of hours, ventilation and light and all the other things that result in a low health, and that is organization into trades unions, where they may collectively bargain with collective organizations of men for not only a wage, but the hours of labor and the conditions under which they must labor. I believe that these organizations of men will then see and allow the seller of that labor to do as other sellers of commodities are able to do, that is. place a price upon their own commodity.

There are two ways of obtaining a shorter work day for women, and more humane legislation for women and children, and they are through organization and through legislation. But in legislation results are really obtained by the vote more than in any other way; and since in only a few of the states are women allowed any voice in legislation in the laws under which they live, we can readily see that little relief will be given to them until such time as men will cease patronizing them under the title of chivalry and translate that chivalry into justice. The eight-hour day for women is in force in only five states, and these the suffrage states. Is it because the men of the suffrage states are more generous and chivalrous than in the other states, or is it because women are able to cast a vote for laws — remedial laws — to benefit and uplift themselves? In Colorado we have had an adequate factory inspection law and a child labor law and an eight-hour day for labor for some years; not a forty-eight hour week or fifty-four hour week, nor any other ifs or ands or buts — a straight eight-hour day. When that was agitated, the women who were largely responsible for it, demanded and insisted that it should be an eight-hour day rather than any number of hours. There is a provision that women may work for one week preceding the Christmas holidays in mercantile establishments until ten o'clock at night. This law has a penalty attached and it is enforced; and there are a sufficient number of factory inspectors employed to carry out the provisions of that law. The employers did not discharge the women and put men to work in their places when this law went into effect, as they threatened to do. They did not lower the wage of the women workers, and they did not become bankrupt as the result of giving this humane legislation to woman. And statistics prove, in the office of the Labor Commissioner, that accidents have been lessened in manufacturing establishments because of the shorter workday; and employers have learned how to regulate this day by certain shifts so that it has really been beneficial to them, as they have gotten greater efficiency because of the shorter workday.

The Colorado Federation of Women's Clubs and the State Federation of Labor are largely responsible for this law that is upon the statute books of Colorado; and the benefits have been set down in statistics to show that this shorter workday has proved exactly what the women said it would do when it was enacted.

I had a very pleasant experience about ten days ago, when I listened to a discussion concerning the eight-hour day, or the shorter workday; and I heard an eminent physician — a very splendid speaker — who represented a life insurance company in New York, say, that he believed that in some industries and some occupations where great muscular effort was required, or great mental strain, that eight hours was too long, and that seven hours might be too long for women; and he also told of something that was especially interesting to me, when he spoke of an office where the women had a rest period of five minutes twice a day during the day time; the windows were opened and the room was allowed to be filled with fresh air, and the women relaxed; and that was called — I think he said — the seventh inning. Now, you all know that was not a Union office, because we have stricter discipline than that; we have no seventh inning; we go right straight through the eight-hour day; but to me that opportunity of having fresh air and ventilation seemed wonderful and I would relish that more than the five-minute period if that were granted to me. Women in industry suffer so from inadequate ventilation. I don't know what is the matter in the composition of most men, they seem to thrive in a close atmosphere; sometimes they just seem to love tightened windows and tobacco smoke and all of those things, and they grow fat on it, while women simply suffer. Now, for my part, I don't mind tobacco smoke — any kind of tobacco smoke — yes, I do; I draw the line at stogie smoke — but any other kind of smoke, if I may have a little bit of ventilation; and that is the thing that seems almost impossible in newspaper offices; we have what we call adequate ventilation; and I have gone home ill from the effects of the close atmosphere. Therefore, some of you manufacturers here must find a closed shop of architects, those who know something about scientific ventilation; because in my experience there is no way of ventilating most buildings except by opening the windows, where the air would flow on the heads of those nearest the windows, and those far away get none of it, and those near to them clamor to have them closed at once. So I look to you people who have more time than we do — who are bound to the industrial wheel — to see if you cannot find a closed office of architects where they know something about industrial ventilation; that is especially interesting to me, that subject of fresh air.

Now, as an illustration of what the eight-hour day will do for men in industry, I want to cite the organization to which I belong in Denver — the Typographical Union. Sixteen years ago, through the able generalship of your Mr. Lynch, now one of the Commissioners, the eight-hour day was adopted; and in an article recently printed, it states that in 1900 when the ten-hour day was in operation, the average age at death was forty-one years; and in 1916 the average age at death is fifty-one years; and, not only that, but if the shorter workday has lengthened life, it has increased the wage; because, the same article says that each man's income had been increased by $144 a year. I want you to think about that — an organization of men — fifty thousand — and ten years added to the life of each one of the fifty thousand because of the eight-hour day being in operation. Statistics prove that this is so; they have the figures for it at the International Typographical Union office. If the shorter workday can do that for healthy men, what might not be achieved by the shorter workday for women! You know that in the printing industries there are very few women; but when you can add ten years to the life of each of fifty thousand men by the shorter workday, it is worth looking into, gentlemen. If all manufacturers' associations and the chambers of commerce and the employers' associations, and all of those who have heretofore — I say heretofore — been hostile to this matter of a shorter workday for women — if all of these were to say, "I believe that we have been mistaken — have we not been mistaken, and caused the greatest injustice to fall upon those who are least able to stand it — the women and the children — come, let us reason together — let us look into this thing of collective bargaining." Let us reason together and look in and say, you give a point and I give a point, and, after due deliberation and consideration arrive at a conclusion and sign these contracts of collective bargaining — union contracts — with manufacturers' unions and the labor unions. If each were just and honest and would live up to the contracts so gotten up, I believe the men who have heretofore talked collective bargaining would be so amazed at the efficiency and the wonderful results of these contracts that they never again would go back to the old days — never again would they think of it. To my mind it is as useless for employers to fight union organizations as it would be for union men to fight new and improved machinery. Each will organize for betterment of themselves, for better hours, better wages, greater sanitary safeguards; and it is right that they should; each has its own viewpoint; but it is folly to keep up this matter of fighting each other. There are thousands and thousands of dollars lost that might be better spent in education instead of all of these strikes, and instead of all these practices that manufacturers keep up, and all of these strikes that the laboring men keep up, it might be arranged so peaceably and so wonderfully, if the men were only kind and only humane. You know, when I think of the splendid American men in America — the finest men in the world — I can hardly believe that, because of the stress of life, and to make a living for themselves and families, they have really had to consider the dollar above the human being; but I do know that a new day is dawning, and these splendid men of America will see the light; and this assemblage is an evidence of that new day and of the awakened conscience.

But, in the matter of the shorter workday for women, I feel that what we need — as in the present stage of development of most women it can hardly be brought about — is collective bargaining; and if you gentlemen believe that chivalrous men are a more potent influence to bring about an eight-hour day in and for New York, than the first women in the other states, demonstrate it by placing an eight-hour day on the statute books of New York state at the next Legislature. If individual bargaining is a better thing than collective bargaining to bring about a shorter workday for women, prove it by granting an eight-hour day to the workers and the potential mothers of the race. I believe that the splendid men of America, and the men who here represent organizations of all kinds, have sufficient breadth of intellect and vision of the wonderful country that America is to be to consider this question; and it is in just such assemblages as this that I believe the first fruits of such work will be felt. I thank you.

Miss Beeks: The National Civic Federation, under whose auspices this program was arranged to-night, has evidenced its impartial character, composed as it is of the presidents of international labor unions, of employers of labor, and every element of society. Colonel Pope, President of the Manufacturers' Association, who has honored us with his presence to-night, might say that an open shop might bring better ventilation than a closed shop of architects. But it might be said that when the day comes that chivalry is gone on the part of men and mystery on the part of women, that perhaps women will indeed have a hard time; but, as I say, we are an unbiased institution, and we welcome all forms of discussion. There is no one who has taken greater interest or been more active in promoting its interests than Mr. Gernon, whose ambition I know for several years has been to inaugurate traveling safety exhibits; and, perhaps, he will soon find that his desire will be realized. He will abstract his paper because we have two wonderful films to be shown afterwards; and I can say that the entertainment will last no longer and be no less interesting than the theater which you would be attending if you were not here. I now have the pleasure to introduce Mr. Gernon.

NECESSITY FOR EDUCATING EMPLOYERS AND EMPLOYEES IN FACTORIES AND MERCANTILE ESTABLISHMENTS

By James L. Gernon, First Deputy, New York Industrial Commission

The subject we are about to consider would admit of hours of discussion, should we fully consider it in all its various phases. In order not to trespass on time, it seems advisable, therefore, to present a few thoughts which are important on an occasion such as this.

It is very necessary that the employer and employee be educated in regard to the provisions that are contained in the Labor Laws to make effective the enforcement of its provisions. Such laws should be effective and of a high standard, and thus enable the enforcing agency to cope with the many varied phases of the industrial problem of the State of New York. They should also be reasonable in order to impose no unnecessary hardship on the industries, but strong enough to eliminate abuses. In this educational work we might very properly include the public and the legislators, and we should not forget the enforcing agencies and the courts, all of which are charged with the enforcement of the laws, as enacted.

As in all systems of teaching, there must be a proper foundation. The foundation in this instance should be labor laws of a type sufficiently progressive to properly cope with the present industrial conditions.

There are ever changing industrial processes, many of which are productive of industrial hazards and diseases, in the wake of which follow thousands of instances of untold suffering and enormous economic loss. Much of this human waste can be prevented. Of industrial diseases we know far too little and here is offered a wide field for intelligent investigation and endless opportunity for educating all the people.

It is said with much truth that the most successful industrial establishments are those with the largest scrap heap, meaning that in this way out-of-date machinery is replaced by modern equipment, which will increase the productive capacity of the plant. This is meritorius and good business.

No humane employer would care to, and no thoughtless employer should be permitted to add unnecessarily to the humane scrap heap. The records of the Industrial Commission for the year 1916 indicate that there will be 325,000 industrial injuries reported.

Very few of our people realize what industrial injuries mean to the State and Nation. For the calendar year 1916 the total number of compensated accidents in this State will reach 60,000. On the basis of past experience in this State and elsewhere, it is possible to estimate pretty well how these will be distributed as to extent of disability. Approximately those 60,000 cases will include 1,500 deaths, 120 permanent total disabilities, and 52,200 temporary disabilities with loss of time of more than two weeks.

These figures might be translated thus: at the present time for each working day in the year (reckoning 300 days per year) there are five employees killed, 21 permanently crippled or maimed (including for every three days one permanently and totally disabled), and 174 suffer serious temporary injuries.

The amount of compensation under the Law (exclusive of medical benefits) for these 60,000 accidents, will be in round numbers $11,500,000, including nearly $5,000,000 for deaths, nearly $4,500,000 for permanent injuries and over $2,000,000 for temporary injuries. Or, translating again into figures per working day, compensation for accidents is being paid at the rate of nearly $40,000 per day.

Of course, the $11,500,000 for compensation does not represent the total economic loss from accidents. To that would have to be added several other items, including the cost of medical benefits, of administering the Compensation Law, of administering insurance, and the wage and medical losses of injured employees which are not covered by compensation. Pushing the matter to the point of estimating these further losses, it appears that the total direct cost represented by wage loss, medical expenses, and cost of paying compensation for accidents covered by the Compensation Law reaches in this State $30,000,000 per year at present. Reduced to a working day basis, this means losses at the rate of $100,000 every day.

The above figures give some idea of the losses in life, of the amount of physical injury, and of the money waste, the reduction of which is the object of the safety movement.

What an appalling amount of human suffering and economic loss is indicated by these figures!

The labor laws of the State of New York in general, are in advance of the laws of many of the other states, but in this connection it may be necessary to educate the public, the employer and employee to the fact that in many states some features of their labor laws are far in advance of New York laws.

In addition to requiring the safeguarding of machinery, the Industrial Commission must be given power to go further and establish safe practices in the various industries. Examination of the causes of industrial injuries reveals the fact that many result from unsafe methods of working and handling material used in the industry, and in far too many instances no attention is given relative to instructing a new employee regarding the hazards of the industry, or the safe practices which are essential in the proper performance of his duties.

Since the creation of the Department of Labor in the State of New York, the work of the inspection bureau has been that of education. The inspectors must impress upon the employer the necessity of complying with the child labor law, the hours of labor for children and females, the day of rest law, the sanitary requirements, the requirement of safe exits from the building, the installation of fire alarm signal systems, the conducting of fire drills, the installation of safeguards on dangerous machinery, elevators, etc., the providing of exhaust systems where grinding and polishing is conducted, the providing of sytems of ventilation, the removal of dust, gas and fumes, the providing of seats for females, the payment of wages weekly and in cash, and other provisions too numerous to mention.

It is necessary to post the labor laws, as well as schedules showing hours of labor and day of rest, in factories and mercantile establishments, and to explain their provisions. The posting of this law is to acquaint both the employer and employee with the provisions of the labor law.

Even with the posting of the law in factories and mercantile establishments, it can be said that in the majority of cases neither the employer nor employee avail themselves of the opportunity to become acquainted with the law as posted in the establishments.

Where violations of the law are found, the notice containing such orders is educational, conveying to the employer such requirements as are necessary in order to have the establishment comply with the law. The inspectors are required to explain the orders issued to some person in authority, so that there will be a clear understanding of the requirements. The notice conveying the orders also contains the name of the person to whom the orders were explained. Inspectors must report in writing all compliances with orders on an exact duplicate of the orders issued.

Many employers readily comply with the orders issued, but the Department is compelled to institute many prosecutions for failure to comply. This step has been found necessary even after a final notice has been sent notifying the proprietors that unless the orders issued are complied with the Department will be compelled to institute legal proceedings.

In our educational work we find many who must be forced to comply with the provisions of the law, and in this connection it might be said that employers can be placed in three groups: those who are in advance of the law, those who will comply with the orders issued, and others who will not until forced to do so by final notice or actual prosecution. This demonstrates that in the enforcement of the labor laws we have to resort to educational methods, and in many instances are forced to call upon the courts to aid in this education, and in some parts of the State the courts are not doing their part of the work any too well.

In order to protect the employees, and also for the protection of the employer who complies with the law, from unjust competition of competitors, the law should be strictly enforced. We have thousands of employers in this State who are doing much more for their employees than the laws of the State demand. This class of employers realizes that proper conditions of employment are productive of efficiency. This does not mean the stop-watch type of efficiency which endeavors to make a human being compete with a machine and clock, neither of which rests while the motive energy is applied. In all such instances the human machine is the first to be assigned to the scrap heap.

The up-to-date employer is desirous of obtaining the greatest amount of product or service with the equipment he has installed in the business. He realizes that good service and product cannot be accomplished with employees who are discontented or physically unfit, because of long hours, unsafe or unsanitary conditions, or because they are given a task that is beyond physical endurance.

In many well conducted establishments that desire productive efficiency, the employer knows that fatigue should have no place. This class of employers believe in shortening the hours of labor. They know that accidents diminish with shorter hours and physical conditions improve.

Statistics furnished by the United States Bureau of Labor show that of the twenty-five thousand or more fatal industrial accidents that occur every year, the highest percentage takes place between the fourth and fifth hours on duty.

Scientific investigation recently conducted, shows that fatigue, due to excessive muscular activity, impairs the health of the nerve cells, uses up the muscular tissues and creates more waste than can be absorbed by the system.

Eminent physicians state that as a result of modern industry physical degeneracy among working women is going on at a rapid rate.

We have still many employers who fail to realize that it is humane to provide seats for females, and permit their use. This is particularly true in many mercantile establishments, the impression prevailing that business suffers if employees are seated, even when not serving patrons. As a result many employees are victims of chronic physical suffering, due to standing continuously.

Recent development in the industrial field is the three-tour system, wherein each shift works eight hours a day. It is regrettable that in the last few years this system has been instituted for the purpose of increasing the output of the plants and not for the purpose of reducing the working hours of the employee. Nevertheless, there has been considerable progress in the establishment of the eight-hour day in industrial establishments, aside from such plants as work the three-tour system, and it has been clearly demonstrated that an eight-hour day is productive of less fatigue and, consequently, promotes the health of the worker and diminishes the number of industrial injuries.

When the State of New York adopted the day of rest law, providing one day of rest in every calendar week, it took a step far in advance of many other States. This legislation was productive of immeasurable benefits to workers of the State. Many thousands of employees are compelled to keep pace with the high speed machinery in modern industry. The operation is the same day in and day out, and, naturally, monotonous and nerve racking, and the day of rest is absolutely essential to such employees. Much of the work in factories and mercantile establishments produces fatigue, and no one will dispute the reasonableness and necessity for such a provision of law, and the employer, the employee, the public and the legislators should be educated to the necessity of the law applying to all industries.

The up-to-date employer realizes that a day of rest to his employees is essential, regardless of the fact that they may work but eight hours per day. However, since the enactment of this law it has been necessary to educate many of the employers and employees to see the necessity of complying with the law. Some employers desire to operate their factories and mercantile establishments seven days a week, notwithstanding that the industry is not one which is necessarily continuous. There has also been opposition from employees because of the fact that the law requires but six days work, and they would lose a day's pay when prevented from working seven days. However, this law has been most beneficial in absorbing many of the unemployed, and in many instances the employees receive the same pay for six as they did formerly for seven days.

Modern construction of factory and mercantile buldings has been productive of many excellent types, in which an abundance of natural light is available. These buildings are far in advance of the older types. Even in this type of building, however, as well as the older ones, they fail in most instances to provide proper artificial illumination for the many thousands of employees who work during the dark hours of the working day, and in many instances they work continuously by means of artificial light.

In many of our cities we have a class of building used by factory, mercantile and office establishment. Many of such buildings are poorly lighted. We know that recent investigation of office buildings in New York City has shown many office and mercantile buildings as having unsafe exits in case of fire, with over-crowded floor area, and also showing them to be unsanitary, poorly lighted and ventilated.

All should be educated to a realization that proper lighting facilities are essential, when we know they are necessary to health, safety and efficiency.

And here is a fertile field for intelligent investigation and education, in order to establish a proper standard of light for the protection of thousands of workers.

Education is the basis of this campaign to eliminate as far as possible industrial hazards, and reduce the suffering and cost they entail. We are prone to speak of industrial accidents. The term is a misnomer. Some are accidents, many result from the improper use and maintenance of machinery and the unsafe storing and handling of material. There is much carelessness on the part of employer and employees, and too little is known of the percentage for which fatigue is responsible.

Our efforts should be directed to instilling personal interest into the safety movement, and in this way convey the realization of responsibility to the employer and employees. relative to the installation of safe practices in the respective industries, actualizing "I am my brother's keeper," for who can tell who may be next in the awful toll demanded by industry.

Special posters should be provided, sufficiently instructive and properly illustrated to instruct the employers and employees relative to hazards of the industry in which they are engaged, and the safe practices necessary to reduce or eliminate such hazards from the industry. Moving pictures, to convey safe and unsafe methods, have been used with splendid effect, and their use should be made more general.

We must bear in mind that we cannot legislate or make all industries absolutely safe. In order to reduce much of the human waste, caused by industry, we must have intelligent co-operation from the State and all parties interested.

As we are viewing these problems to-day in the light of the laws enacted, we are simply scratching the surface. The future is radiantly hopeful. Investigation and education will have to be our guide.

It is essential that the State protect our workers if they do not want irreparable injury done to the body and mind of the present and future generations, and in the light of the present day propaganda for national preparedness, the safeguarding of industry is the first step to our national efficiency of the future.

MISS BEEKS: Mr. Gernon has shown that his paper applies to women in industry as well as men. We women feel that we may deviate sometimes and not confine ourselves particularly to the subject; therefore, we are going into safeguarding in coal mining a little bit to-night; and if there be time, and you can endure it, we shall also show you a film showing the conditions in the greatest mining plant in the State — that of the Witherbee-Sherman Company. Mr. William W. Jones, mine inspector of the State Industrial Commission, will show this film. Mr. Jones' film comes last. We shall also have emphasized that in New York State there is a vast deposit of coal which has not been touched. Since we are to go into coal mining, it is quite important that we should learn something of the hazards in that industry.

I shall now introduce to you Dr. Frank Milman, who was a mine boy himself at the age of nine, and has had experience throughout the industry. I know of no one more eloquent, or who has studied more thoroughly to learn of the hazards of coal mining than he. He will speak to you and show you his slides; and he has a curious and interesting one of coal mining in China.

As I shall not have an opportunity of seeing you again, since we shall now be devoting our time entirely to the films, and pictures, I shall thank you very much indeed and say good night.

MOVING PICTURES

At the conclusion of the above addresses, Mr. Dow presented a motion picture film: "The House That Jack Built," which emphasized the arguments in his paper that the home conditions surrounding an employee constitute a vital factor in his safety while at work.

Dr. Frank J. Milman, Executive Secretary, New York Coal Dealers' Association, presented a film on coal mining in China and in the United States. The kinds of accidents in such mining, their causes and means of preventing them were illustrated.

Mr. W. W. Jones, Mine Inspector of the New York State Industrial Commission, presented films illustrating conditions in the iron mines of the Witherbee-Sherman Company at Mineville, New York. The precautions taken to prevent accidents and the welfare activities of the company were presented.

TUESDAY MORNING, DECEMBER 12

PRESIDING OFFICER: LOUIS WIARD, NEW YORK INDUSTRIAL COMMISSION

COMMISSIONER WIARD: You may possibly think that there is delay this morning, but we found so many of the delegates and so many of the people had not finished their breakfasts at 9:30 that it was suggested we start at 10 o'clock this morning. We may start the program on other mornings at 9:30, but it apparently must have been a large night for many because they are just coming out of the dining-room. To those who were here yesterday when an announcement was made about Mr. Gompers, will say that a telegram was sent day before yesterday to Commissioner Lynch, but through error it did not reach him. Mr. Gompers wires: "Please convey to all participating in conference to further industrial safety for the workers of the State of New York my deep appreciation of the importance of the matters under consideration and my deep regret at my enforced absence. Your meeting should insist upon all safeguards for life and safety of our fellows and thus be of real service to our state and country."

This morning, the second day of our Congress, we have designated as Machinery Hazard day, and want to get right into the real meat of the situation. I will call upon the speakers instead of doing any of the talking myself. The general topic is, as I said before, Machinery Hazards, and our first speaker on the Guarding of Elevators, Cranes and Moving Machines, is Mr. John Price Jackson, Commissioner of Labor, Pennsylvania.

THE GUARDING OF ELEVATORS, CRANES AND MOVING MACHINES

BY JOHN PRICE JACKSON, Commissioner of Labor, State of Pennsylvania

I should in some regards have been more pleased if your Chairman had written me asking me to speak upon the subject of the reduction of accidents by reducing the turn-over of labor. It has been almost universally indicated to me by those who are directly in industry that a very large proportion of our enormous accident list this year has come through a very rapid changing of labor, so that the great bulk of the men are not long in their positions and do not become familiar with the hazards. I might say they are not long enough in their positions to get the full benefit of the prosperity which is now spreading over the country. One man last evening told me that in one of his great shops the change of labor was 60 per cent per month. Another great establishment four years ago with about 28,000 employees had a turnover of 50,000 men in a year. That is, 50,000 new men were employed in a year, with a 28,000 enrollment. They adopted new methods and in the three years following, to the present time, with an average of about 35,000 men, they only had changes of 12,000. Now you must readily appreciate that, if the conditions of work in the plant are such that the men want to stay in that plant and affiliate themselves in that plant, they will more readily learn how to care for themselves and their fellow employees, than can the newcomers, and incidentally the chances are that they will become better producers. Better producers in every sense of the word by reason of having become experienced with the particular concern that they are with, and because they have learned some of the ideals and purposes of that concern. But whatever methods we use, you and I, gentlemen, and the men and women and the children of these great United States, are going to save a million or more workers per year from serious accident and mutilation, and we are going to save many thousands from death when we get our accident prevention crusade fairly on its feet. We are but just awakening from a state of inert, inhuman torpor. Two million and more serious accidents, sufficient to demand a physician's care are occurring in our industry each year. Ten thousand and more, nearer twenty thousand, fine fellows are being crushed to death annually by the wheels and the shafts and the engines of industry. Legs, arms and eyes are being sacrificed by our stupidness, to a number sufficient to clog the principal streets of this beautiful city, if they were gathered together. If we could gather the arms and legs that have been sacrificed unnecessarily, not counting those that have been sacrificed necessarily (there are inevitable accidents), and should pile them up around here we would be a pale, sickened bunch of men and women as we walked through the streets to our hotels. It would be a terrific slaughter we would see. Untold tens of thousands of wives, sweethearts, mothers and children are following hearses bearing to their graves the bread-winner and protector, or are bemoaning with him the serious injury which has incapacitated him for the battle of life. To-day, gentlemen, in this country, scattered over it at various points, you would, if you could see through space, see the shaking, sobbing form of the newly-made widow caused by the industrial accident. In many spots in the United States, right to-day, while we are holding these meetings, you would see many a home where the newly-mutilated man, who is never to be a bread-winner again, but to be a care on his family, is being tended with care and loving kindness by his family through his terrible suffering as he is trying to mend, so far as he can. To-day, right to-day. It is not something impersonal. It is right here with us. Great fortunes of money, sufficient to maintain our Army and Navy and go far toward running our national government, are disappearing into the insatiable maw of industrial carelessness. I had two lessons given to me after I had been made Commissioner in Pennsylvania, having general direction of this kind of safety work from the official standpoint. One of the lodges of railway trainmen said, "Mr. Jackson we want you to come up and have a sociable time with us. We want to teach you a lesson." They didn't tell me what it was. I went to the meeting and the room was full of the members and guests of the lodge, and of those people in that room, fully a third were men with their legs off, or their arms off, blinded in one eye, blinded in both eyes, crooked backbones, etc. A whole third of that room was filled with that kind of men. The director of the meeting informed me that they had gathered together in the little town of Harrisburg the cripples and maimed who had been injured and were living there in their own particular trade or union. It was a lesson, gentlemen. But I will tell you another lesson that is a little incidental and has not very much to do with safety first. Curiously and interestingly, that bunch of cripples were about as jolly and good natured a set of fellows as you could want to meet, and it was a delight to sit there with them. It showed some nerve. It showed the real American spirit.

When we developed to the horsepower, the horse walking on the tread mill or pulling the bar around to turn the churn and to run the machine, to the great single unit engine of 50,000 horsepower, when we harnessed Niagara, when we advanced from the master with an assistant or two in a little shop, to the great corporation with 50,000 workers, we built for ourselves, gentlemen, a terrible industrial Frankenstein. He has wrought well for us. He has made it possible for us to have luxuries, clothing, food and houses, such as in the old days of the unit horsepower it was impossible for us to have. But while he has been doing this good work for us, this Frankenstein of our own building, he is creating a destruction that is appalling. The task of properly bridling and breaking him to harness in his destructiveness seems today in our sleeping condition almost superhuman. Yet we are, in spite of what I have said, we are still asleep. We are but just beginning to awake. You people who are gathered here are fairly well awake, but when I say that, I mean the great bulk of the people of this country. The crush and crunch of bones and the squirting of life blood of husbands, fathers and sons is going on right now. If we could just gather all that is going on, this very hour, into this room, it would be the best lecture that we could have. It appears to us in our coma, in our sleepy state, but as the sounds of the good housewife swatting a fly. When the scourge of infantile paralysis came upon us we rose up as one man to smite it. We closed our schools, we quarantined our states. We made every sacrifice to stamp out the curse. Mothers, fathers, sisters, and brothers were in constant fear for the little ones. Yet, gentlemen, though we do all this when the scourge of infantile paralysis comes upon us, we eat, and I do not speak so much of you gentlemen who are pretty well awake, we eat and we sleep and we work and we play with perfect calmness with this far more terrible scourge upon us. A scourge that does not give us respite with the cold, as does infantile paralysis, but which goes on gathering its relentless toll of humanity week in and week out, year in and year out, and we sit at the table and talk about the pleasures we are to have that day, eating our breakfasts, and we go out and entertain ourselves. While the infantile paralysis was on we were talking about that. We were interested in that. So we talk about this terrible war now, that is devastating Europe. But we are still asleep as a people. America has often risen up to right great wrongs, to protect her people and her honor. She cast off the yoke of the foreign oppressor in the early days. She cleansed herself of the sickening blight of slavery. She is pouring out gold to-day to succor the widows and orphans and the maimed in Europe. She is combating fearlessly such insidious human foes as tuberculosis and typhoid fever. She is now awakening and will completely awake and rise up in her might to cast out and destroy this awful blood-sucking industrial vampire which is now upon her. The St. Johns, in the form of our newspapers, cried long in the wilderness. It took a great while to awaken us, but at last we listened and then we wiped out the great dangers of travel on our railroads. If you remember, some of you older fellows like myself, can remember how the slaughter of passengers on the railroads had become a national scandal. And we wiped it out. It has taken many years, but we are destroying the hazard to our boys and girls due to the Fourth of July. We are rising up to that, and just so we are going to rise up to this other, greater, worse loss which has come upon us so insidiously as we have developed into a bigger and more complex industrial organization. We are going to wipe out this great waste of human resources, human life and human happiness. Already in spots the number of accidents have been cut from one-half to one-quarter of what they formerly were. The methods of doing this are already pretty well formulated. But we are going to improve on the formulation. We are going to learn how to do it, although as a beginning the measures are pretty well worked out. But to accomplish the purpose fully all employers, not a few here and there, but all employers and all employees, whether organized or unorganized, and the government must join hands in generous, unremitting co-operative labor. Steadily, day after day, week after week, year after year, as the accidents occur, conditions must be studied and regulations formed, not only in the shop, but for the states and the nation. The nation is composed of three divisions, employers, employees and the government, and, gentlemen, government is nothing more or less than you. I am a servant of the people of Pennsylvania. Your Mr. Lynch and your Mr. Wiard and the rest of your Commission and the inspectors are merely your servants, to do as you say. They are not something tainted. They are good, decent human beings, and I might say that most employers and most laboring men are good, decent, honest human beings. There is too much of this business of suspicion and thinking that the other fellow, in a little different walk of life, whether he be a government official or a labor man or an employer, is a crook. Most of us have a good deal of good sound reasonable humanity, and when a good sound reasonable proposition is put up to us as to the general good, the great bulk of us are bound to hear it. I admit there are some who will raise the price of eggs, or something else in a most indecent manner. These committees must develops methods and put them into force which will wipe out, if necessary, the dangerous places, which will sound the warning signal where it is needed, and which will educate men, women and children in the ways of carefulness for their own safety and that of their fellows, not only in the shops but in the homes and in the public schools. They must build up ways for reducing the great accident-breeding turn-over of labor, which I mentioned at the start. But with these preliminary remarks, I must say a few words on my subject.

I cannot go very far into a technical discussion this morning, and I would scarcely feel competent to do so if I could take the time. I shall, however, in the matter of cranes, go into some little detail, and if the picture man is here I will show about six slides showing methods of signalling, and I will touch upon the matter of elevators. My topic is safeguarding of cranes, elevators and moving machinery. This subject was assigned to me by the chairman of the program committee, and I assume it was intended to cover all industrial apparatus which runs on tracks and in guides, apparatus used to move anything. This would include cranes, elevators, industrial railways, freight trucks, such as automobile trucks or storage battery trucks, etc., running out in the streets from the plant and into the highways of the community, or small trucks in the plant itself. Of course with such a large subject I cannot do more than touch upon, as I said, a few very salient points, and you must depend upon those who are to make the discussion later to bring out the great bulk of useful information.

The point of primary importance as regards dangerous elevators, cranes, power-driven freight trucks and industrial railways, is the human element.

The human element is the one element up to within the last decade which has been given less study than any part of the industrial equipment. It has been taken more or less for granted. We can pay $60,000 for a drilling machine, boring machine, and we can study it with the greatest care, and we can see to it that it gives us the greatest output, but after all the $60,000 boring machine is of comparatively little importance to the success of the plant when put up against the wonderful mechanism of the human beings who are running that plant. And just so in this safety matter, especially in the kind of apparatus I have to deal with, the human element is the all important one to be given consideration, because with a bad human element the accidents will occur. No person should be permitted to drive apparatus of this kind who is not fully qualified, mentally and physically, for the task. Though not often literally practiced, the habit of permitting any one to drive a passenger elevator is very dangerous, and to permit an inexperienced man to handle the power-driven traveling crane is the next thing to criminal. There may be no law against it, but it is certainly much more criminal than many acts for which there is a definite penalty in the law. This statement also applies with much force to the driving of power trucks, or industrial railway trains. Even in the handling of freight elevators it would be well if those who are to operate them were designated formally by the manager after due understanding of their duties and responsibilities. He may, for a freight elevator, designate a large number. However, those that are not designated should not be permitted to run that elevator. I have emphasized this human element by reason of the cases that are not unknown where the inexperienced operator has swung great masses of material or even molten metal above the platform of a busy shop or foundry. There have been such cases, but I am happy to say they are comparatively infrequent. And again where equally incompetent persons have operated the other apparatus we are dealing with. Before a person is placed in the driver's seat of the power-driven moving apparatus he should have passed a careful examination of his intelligence, nerve and judgment, and should have been carefully trained in his duties. Drastic action should be taken in the case of any person other than those trained and designated for the work who may enter upon and drive such dangerous apparatus. And also in the case of any manager who will use an unfit man for such duties. There is another point that applies to the safety situation with reference to the machinery that I am dealing with. New machinery can usually be guarded in a thoroughly effective manner, and it can usually be guarded in an effective manner without undue expense or burden upon the industry. But to put the same guarding on machines already installed would demand a prohibitive cost and possibly, destroy the usefulness of the machine. In guarding, therefore, it is generally wise to consider the problem from two standpoints, namely, new machinery and machinery already installed. The first should be made as perfect as possible, while the second should always have removed from it unusual and particularly bad hazards, and all the hazards that can be removed. This brings us to another point. We must not proceed beyond the point in expense which can be borne by the industry. By that I mean that we shall not throw a machine entirely out because of some dangerous points which make it an unreasonably bad machine to have in the plant. We must not drive the employer beyond a certain point in expense, or we may so injure his prosperity as to do a greater harm and cause a greater actual physical injury as well as unhappiness to the employees and to their families than would occur by the actual chance of injury from the machine. That is, the man who does not have enough work, and his wife and his children, due to not having enough to eat and not having sufficient raiment, and not having sufficient heat, may actually be hurt physically to a more serious extent, and that hurt may become a bigger element than the hurt that he may possibly get through conditions not being perfect and to the highest degree in the shop. You must give good sense to that problem. Furthermore we must be careful not to interfere too much with the working effectiveness of the machine. With reference to the matter of guarding and the using of good sense, let me give an illustration of a man who appeared before our Pennsylvania Industrial Board. He wanted something done that was going to cost a certain industry in the State an enormous sum of money. Both labor and capital as a whole were opposed to it. This particular man was exceedingly positive. One of the members of the Board put up to this man this question to find out what his attitude was. He said: "Mr. Blank, you appreciate the fact that railroad trains running on a single track have guard rails at curves to prevent the trains leaving the track. There is a chance also of a train jumping off the track on a straight-away track. Why not have continuous guard rails on both sides all along, making those guard rails continuous, that is, have two sets of rails instead of one set?" "Yes," said Mr. Blank, "I think that ought to be done if it will save one single life in a century." Now you appreciate that it would put a burden on our people as well as on the railroads, with probably no elimination of danger. It would be wholly unnecessary, and we don't want to reach any such point as that. We want to save these million accidents, and we are going to do it, and we are going to use reason in doing it. We are not going to do things with unreasonableness. You might just as well again take a case like this perfectly absurd case if you are going to guard a machine up so it cannot be used. It is like having an automobile in the garage and not putting gasolene in it because gasolene is dangerous and might explode. In other words, you see there is a possibility of going too far. Again, you may not go far enough and therefore you are not eliminating hazards in a sensible and reasonable way. On the other hand, you may go too far and do nearly as much injury. In traveling cranes, to be more specific, a large factor of safety should be used in the construction, particularly in new hoisting apparatus and the gears. It is an apparatus that goes above you, with great loads, and too great care in the design of such apparatus cannot be exercised. Stairs should be used to go to the crane from the ground to the control, rather than a ladder, wherever that is possible. Generous footwalks and platforms should be provided with suitable guard and hand rails. It should be suitably guarded with hand rails and toe boards, etc., the toe boards being for preventing tools from falling down on people. Means of escape for the operator should be provided, so that he will not be penned up there in case flames go in his direction. The operator's room should be generous in size and be equipped with signal and with fire apparatus. Where hot metal is carried it should be protected underneath with a shield. The control equipment should be conveniently arranged, so that the man can quickly make his changes. and all the parts should be guarded and constructed so as to be in accordance with the best modern practice of guarding and in eliminating the danger of moving parts of transmission machinery. The electrical machinery should be in accordance with the United States standards which we have adopted in Pennsylvania, and which I presume you will adopt in New York. The control should always be equipped with a main line cut-off switch, so that the entire electrical power can be cut off the crane. It should be possible to lubricate all the parts of the crane while at a standstill. Great care should be taken to have effective brakes. You cannot emphasize too much the necessity of thoroughly effective brakes that will act quickly and without danger of failure. The hook blocks should be so arranged as not to cause twisting. The drums and shafts should be arranged to keep the rope in place. Sufficient means to keep the carriage from falling too far in case of a broken axle should be provided. The control cage should be floored and the cage kept in order. The minimum of inflammable material should be used in the construction. Now those really form a kind of a specification, just a few of the high points, covering the points where most of the danger has occurred on cranes. Then in operating cranes the man going up to them should have his hands free when he is going up and down. If he has things that are heavy to take up and down he should have a sling and rope and pull them up after he is up, unless he can put them in his pockets. The cage should not be taken for a dressing room and be filled with clothes and with tools. It should be a clean, neat place. The operator should not eat, smoke or read while on duty, nor operate the crane when not in good physical condition. The crane should be carefully examined daily in all of its parts. Operators should avoid as far as possible carrying loads over workmen, and this must be absolutely avoided when he is carrying a pot of hot metal. When doing work about the crane in the way of adjustments, etc., he must open his main switch, and he must not close it until he knows that everything is right. He must be sure that all of the controllers are in off position before closing the main switch. If not, there is a danger of some of his motors starting. If the power goes off, of course the operator must throw his controllers in off position. He should not reverse his motor until it has stopped, owing to the danger of ripping his gears off. He should be very careful of the block when the hitches are made to avoid tripping the limit switch, or running the block upon the drum. The operator should recognize signals from only one man. I am going to show you six signals indicating the kind of signals that are recommended by our Pennsylvania committee. That Pennsylvania committee is made up of expert operators, both from the side of the employers and the employees. The manual signal is recommended. The whistle signals are only desirable when one crane is used. Before starting to hoist, the operator should place the crane directly over the load to avoid swinging it. This of course is true and more particularly when he is handling molten metal. He should not make side pulls unless the man in charge directly orders him, otherwise there is apt to be a swing and a scattering of the load. When he handles maximum loads he lifts the load a little bit and then lets it drop a little to see if his brake holds. If he gets it away up and the brake is in bad shape there may be a serious accident. He ought to be very careful in running into his bumpers, etc., and the limits of operation. He should be particularly careful in dropping his load. Now the foreman who gives the signals, the man in real charge, should preferably, as I said before, give manual signals. He should be responsible for the conditions, for all the hitches, for the equipment, and he should walk ahead of the crane warning people, and should see that the load is high enough to avoid obstacles. And where you have a permanent obstruction it is well to paint it white so that it cannot easily be overlooked by the man in the cage or the foreman. Nobody should be allowed to ride on the load. It is dangerous practice. And when the repairman is at work the crane ought to be put to a point where he can work with the least danger and without interference with other cranes. He should see that his controllers are in off position. He should put up "Out of Order" signs. He should take very great precaution that the loose parts that he is working with cannot drop and hit people below. And he should not under any conditions take off his "Out of Order" signs until all safeguards on the gears and other apparatus are replaced. All of that is not very interesting, gentlemen, to a gathering like this, yet in dwelling on this subject it seems as though touching the high points is the best we could do. I am going to say very little in the matter of elevators. I am going to touch for a moment on passenger elevators. I may be lacking in proper safety first ideals in dealing with my audience this morning, because you know when a fellow gets up before an audience and talks about things he is interested in, sometimes he goes gassing away, usually not with explosive gas, or gas that puts you to sleep, but to a point where you are very dangerous to your audience. I will just touch upon a few important features of the passenger elevator. Passenger elevators ought to be inspected every three months and the certificate renewed or at least a notice of the inspection jotted down. The freight elevator ought to be inspected at least every six months. They should have proper limiting switches. This business of having an elevator go up through the roof is not altogether desirable. In the high speed passenger elevators friction centrifugal governing safety catches should be used which, in case of a drop or runaway will catch the cage. There should be speed governors on such an equipment. The brakes that go on and off as the man turns on and off his power should be of the most effective and carefully designed variety. Such elevators should have absorbing bumpers, either of the air cushion or the oil or spring type, or some good type which will absorb on a good drop of the cage all of the power before the bumper is reached, the point where the cage hits on the bottom. A good many people advocate only the air cushion. We looked up that matter with a great deal of care, and we found that by inquiry of the casualty companies, insurance companies, that have records of a very large number of elevators, of other State departments which had taken up that subject, from our own Bureau of Statistics, and from any other source we could reach, and we could not find instances where in a modern, up-to-date, thoroughly well-designed and installed passenger elevator, deaths or injuries had occurred through drops of the elevator. We had found numerous cases of drops of older elevators showing injuries had occurred, simply by reason of the older style of governors, but we found in the modern elevator practically no cases of injury from that cause, and it seemed unwise to require, at least in the ordinary comparatively low building elevator, the very large expense of air cushion.

However, we do require a cushion of one kind or another which will absorb the energy. We may come to the air cushion for all some day, but we want to be shown before putting that burden on the elevator industry. We have found, however, that the mechanical interlock of the door into the shaft is an absolute necessity. You have adopted that in New York, and let me just give a few personal illustrations. Just after I was appointed and before we had started putting on mechanical interlocks, I was living in an apartment house, and one day I went in and rang the bell on the first floor. The elevator started up and I heard a crunching and a scream. Between the basement and the first floor a repairman was caught midway between the ceiling of the car and the first floor of the building. He was in a hospital for about six months, and I do not suppose will ever be a good man again. Some time before that I had gone into a hotel in Scranton and they were carrying out a boy who had been caught between the second floor and the bottom of the cage. The man in the apartment in Harrisburg was up on the top of the car and I believe was caught between the top and the floor. The man in Scranton was caught between the floor of the cage and the ceiling of the first floor. He was being carried out on a stretcher. I do not know whether he actually died or not. He certainly was very badly injured and I presume he died. I had a best girl when I was a young fellow, I had more than one. I believe, in those early days. This best girl was a real sweet little girl. She walked through the open door of an elevator shaft and went down many stories to her death. Now there are three experiences of one ordinary, every-day citizen, every one of them caused by lack of an interlock on the elevator doors. Now in our statistics down in Harrisburg, and I presume in your statistics up here, you will find in passenger elevators far more accidents and an inexcusable number of accidents occur because of not having interlocks. I had an argument with a man out in Chicago, an expert engineer. He said, "No, I won't put in interlocks." He said the whole trouble is this: "Here is the elevator man, and here is the door. He has his signals in front of him, and the door at the other side. I will put the signals across the door, so that the man always has to look over to see the signals, therefore he cannot fail to see whether the door is opened or closed properly." I said: "You are mistaken. That won't protect you." I took an hour or two going up and down elevators in Chicago, and I found half a dozen cases where the man started his elevator up and gave his door a swing, and the elevator cage floor was probably up beyond the top of the door before that outside shaft door had closed. I took back that evidence to my expert friend, and said, "Here, do you think that is good? This morning I went up and down elevators without safety catches and a lady was asked to step into the elevator with a down step. I have stepped in two or three times since I have been in this city, one place or another, I have stepped up and I have stepped down, and I have seen doors not begin to close until after the cage had started. Suppose they had not given it quite enough swing and it does not close, and suppose somebody walks down the shaft. He is killed. It is a dangerous proposition. They are not very expensive but they are very desirable." And when you have an interlock you want a mechanical lock. It may be operated by electricity, but it should be a mechanical interlock. I am a strong advocate of that proposition. You should have an inner screen door on your elevators, so that if the elevator is crowded full the man up near the door won't have his back scratched, for that kind of a back scratch is apt to do very serious damage. Of course we require two cables. I was once in an elevator with a single cable, and as I was coming down I saw the strand unwinding. That was a pleasant sensation. That was a good many years ago, in an old-fashioned elevator, but it rather impressed me with the desirability of good, sound cable construction. All the devices for safety should be tested by actually dropping the car, possibly beginning down low and going up until you drop it from the top. It should be thoroughly tested. The speed of an elevator should not be allowed to exceed possibly 600 feet, and with the high speed elevators much more precaution is required as to the kind of safety devices than in the low speed elevators. Freight elevators should not be put over passageways. The old scheme was very commonly to have an elevator right over the front passage of shops in small places. They came right down in the areaway where people walked. In new buildings that should not be allowed, and special precaution in the way of signals should be used. In old buildings where it cannot be removed at once, every freight elevator should be carefully protected with automatic doors. I had an interesting experience in this case. I was inspecting a large mill in Huntington, with the president and some of the directors. We got on an elevator to go up several floors. We went by the second floor and a very nice looking young female operative, while we were going up, walked onto the elevator while it was going, went up a couple of floors and walked off the elevator. We went on up to the floor we were going to and got off properly. That seemed to be the regular practice. There was the president of the concern and the manager of the concern standing in that elevator, and they never opened their mouths. We issued orders on that concern the next day, of course. Another thing that needs to be looked out for, particularly in hotels and apartment houses, and also in factories, is to use as little fire material, little burning material, in the construction of elevators and elevator shafts, as possible, and not to make the elevator a funnel or smokestack to carry smoke up to all the floors. That is a very important matter. And by the way, the fire tower is a proposition. I went into a building in your town and I saw a beautiful, complete inside fire tower. The doors were 1¼", with very light panels of wood. Suppose a fire there after hours at this building. There was an open stairway, which of course with a big fire would become unusable. Suppose the fire had started near that fire tower. Those flimsy doors would have been wiped out at once. The smoke would have made that fire tower absolutely untenable. I believe we need to give more care to this matter of not making a fire tower a smokestack and a fire aggravator. Your Commissioner can come down to Pennsylvania and find a good many more of those things that I can find up here, so that is no criticism of the Commissioner. I just want to, if I can, jump onto you a little as to some of the real dangers.

In closing my talk and acting as the official representative of Pennsylvania, I want to congratulate the people of New York upon the fine humanitarian work which you are doing under the wise leadership of your competent Industrial Commission. With such men as Mr. Mitchell and Mr. Lynch and Mr. Wiard, you have been improving your conditions, at least so it looks to us down in the wilderness of the Allegheny mountains, to a wonderful extent, and you deserve to take pride in your Commission, and its self-sacrificing and unselfish work, and I want to say that we look up to you in that regard, and look up to you especially for what you have done in perfecting means for improving the conditions of labor and conditions of safety, and I want to say that I congratulate you upon holding this Conference. We have been holding such Conferences as this. Just recently one was adjourned which had been called by our Governor, and I therefore am in a position to know the value of them. We find that meetings such as this become the great channel of exchange for making known what each of us has accomplished in the year gone and for formulating plans for prosecuting the industrial work for welfare and efficiency for the year to come. When we organized our first congress of this kind we were very much worried, and we did not know. Men said, "Why, you will create a bigger rift between capital and labor, and you, yourself, Jackson, will be laughed at as a joke, and your usefulness as a public official will be gone." The contrary came, just as the contrary will come here. The sitting down together of government officials, of labor men, and of employees will do nothing more or less than tend to cement the bonds of co-operative friendly acting along all lines of industrial movement. This co-operative work must go on throughout the year. It has developed here, and it has developed in Pennsylvania, the need of putting in writing standard codes of practice, so that those who do not know will have something to look to. We have been calling experts from labor and capital with our own experts to help draw up these codes. You have been doing the same. We of Pennsylvania have offered to Mr. Wiard, and Mr. Wiard has accepted a system of co-operation. New Jersey is co-operating, so that we hope as time goes by to have this great work of putting on paper what is considered good practice completed. In this great work of avoiding accidents and making health conditions better, we hope to have almost uniform standards for New York, New Jersey and Pennsylvania. Mr. Wiard will uphold me in that. And we hope by making this uniform system of standards it will tend toward the prosperity of industry by helping to avoid unnecessary burdens. Thus, for instance, if a man builds a lathe in New York State, properly guarded, those guards will be good not only for New York State, but for Pennsylvania and for New Jersey, and therefore he does not have to make new patterns for each State because the guarding is different. And if three great states like New York, Pennsylvania and New Jersey get together on these things, the whole United States will follow. Again I want to say that we in Pennsylvania have a very high appreciation of the work that your great Commission is doing along all of its varied lines of work. We want to congratulate you people of New York on having such leaders, and I want personally to hope for you a very successful and useful organization and the beginning of a renewed activity along these very valuable lines.

COMMISSIONER WIARD: We will now hear from Mr. Crum of the Prudential Insurance Company, on Boiler Explosions.

SOME STATISTICS OF BOILER EXPLOSIONS

BY FREDERICK S. CRUM, PH. D., ASSISTANT STATISTICIAN, PRUDENTIAL INSURANCE COMPANY OF AMERICA

Several years ago, I was engaged in the investigation of fatal accidents and non-fatal accidents to railway employees in the State of New Jersey for the Federal Government. Those statistics covered a period of twenty years, and included about 20,000 accidents or injuries, 1,800 of which were fatal. I was rather surprised at that time to find so many of the injuries, particularly to engineers and firemen of locomotives, were due to boiler explosions. My interest in the subject dates from that time, and I have been accumulating statistics from all over the world since about 1908, and I want to give you the results of some of those data.

In the general literature relating to industrial accidents boiler explosions have been almost entirely neglected as a specific factor or problem. For a number of years I have been especially interested in the statistics of boiler explosions and particularly in so far as they relate to the loss of life and more or less serious injury, both to users of steam apparatus and to other persons who have been unfortunate enough to be in too close proximity when the explosions occur.

Although the statistics of boiler explosions in the United States are, like most of our important statistics, incomplete and inadequate, yet the data available are now sufficient to serve as a basis for discussion of what the present conditions are in comparison with what they ought to be.

International comparisons must always be made with considerable caution and due allowance is necessary for such differences as are not readily measurable even by the statistical method. In this matter of boiler explosions, however, the contrast between the conditions in the United States, the United Kingdom and Germany are so glaring that they cannot be explained without admitting that this country is now and long has been far behind the other two mentioned in the matter of boiler inspection and supervision. Bad as the conditions are in this country, however, they would be far worse but for the thoroughly efficient service rendered by private companies conducting the business of steam boiler insurance. It is not going too far to say that the present practice of boiler inspection as carried on under State supervision has been largely perfected out of the technical experience of the private steam boiler insurance companies. The primary purpose of boiler insurance is not to pay losses but to prevent explosions. Boiler insurance aims primarily at prevention and out of the premiums annually paid on account of boiler insurance only a relatively insignificant proportion is paid out in losses, but a very large proportion is expended in connection with a highly developed system of expert, technical and efficient inspection of boiler and other steam apparatus. On this point I quote as follows from an address by Mr. Frank M. Fitch, Auditor of the Hartford Steam Boiler Inspection and Insurance Company, delivered before the Casualty Actuarial and Statistical Society of America, this year:

> The major portion of the premiums received by a boiler insurance company should be expended for expert mechanical services — in other words, for the care and inspection of the boilers covered under its policies. While this expenditure is of necessity heavy, it is justified by resulting benefits. Natur-

ally these benefits accrue largely to the assured in the preservation and safe operation of his boilers and entire steam plant. Experience has also shown that the scientific examination and inspection of insured boilers produces a declining loss ratio. Conversely, any effort at a material saving in the inspection cost is fraught with danger of a large proportional increase in the loss ratio, to say nothing of the moral and social responsibility involved.

Of all boiler defects discovered during the past ten years, somewhat more than 10 per cent were found to be of a dangerous character.

It is more to the advantage of a manufacturer to have an explosion prevented than to be reimbursed for a financial loss due to such a disaster. The assured thus receives dual protection under a boiler policy: First, protection from preventable boiler accidents that would have caused more or less expensive losses; and second, protection from financial losses resulting from unprevented accidents.

Mr. Fitch in this same address stated that the cost of the inspection service of his company is about one-half of the entire premium income, and his company is the oldest and largest steam boiler insurance company in the United States. During the calendar year 1915 the premium income of the Hartford Steam Boiler Inspection and Insurance Company from its risks in the United States was $1,543,250, the amount paid out for losses was $80,959, and the inspection service probably cost approximately $770,000, on the basis of Mr. Fitch's statement that about one-half of the premium income is expended for inspection service. It is of interest to note that only 5.24 per cent of the premium income was paid out for losses during 1915.

These statistics have thus far been given only for the Hartford Company because it is the oldest organization in the United States writing boiler insurance and, although there are now twelve other companies that write boiler insurance in the United States not one of them confines its operations to that class of business. During the year 1915 the total premium income in the United States under steam boiler insurance was $2,957,852, and the losses were $196,720, or 6.65 per cent of the premiums received. It is of interest to note that in eight States no losses under boiler insurance occurred during the year 1915.*

Some of the detail statistics of the Hartford Steam Boiler Inspection and Insurance Company will give an indication of what boiler inspection service means. Since that company commenced business in 1867, 3,903,843 visits of inspection had been made up to January 1, 1916; the whole number of inspections was 7,850,589; 3,082,380 complete internal inspections had been made; 332,890 boilers had been tested by hydrostatic pressure; 4,702,525 defects had been discovered, of which 495,399 were considered dangerous; and, during this fifty-year period 24,975 boilers were condemned as unfit for use.

In the following tables comparisons are made between fatal and non-fatal injuries as the result of boiler explosions in the United States, the United Kingdom, and Germany. The data for the United States are from the compilation made by the Hartford Steam Boiler Inspection and Insurance Company and these statistics were secured by telegraphic reports, correspondence and otherwise. Probably these statistics, particularly in the earlier years, were not complete. The data for the United Kingdom are from the official reports of the Marine Department of the Board of Trade and have been compiled under the Boiler Explosions Acts of 1882 and 1890. The data for Germany are published annually and the summary statement for 1877 to 1914 may be found in the third part of Vierteljahrshefte zur Statistik des Deutschen Reichs, Berlin, 1915.

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*These data relating to premium income and losses during 1915 have been derived from the detail statistics in the Insurance Year Book for 1916, Spectator Company, New York, and from the summary statement issued by the Hartford Steam Boiler Inspection and Insurance Company.

STATISTICS OF BOILER EXPLOSIONS IN THE UNITED STATES, 1868–1915.*

Years Ending December 31	Number of explosions	Persons		
		Killed	Injured	Killed and injured
1868	101	226	185	411
1869	96	147	268	415
1870	109	213	272	485
1871	89	383	225	608
1872	98	232	235	467
1873	92	130	215	345
1874	96	175	160	335
1875	102	134	195	329
1876	75	147	145	292
1877	83	157	201	358
1878	97	178	216	394
1879	132	208	213	421
1880	170	259	555	814
1881	159	251	313	564
1882	172	271	359	630
1883	184	263	412	675
1884	152	254	251	505
1885	155	220	278	498
1886	185	254	314	568
1887	198	264	388	652
1888	246	331	505	836
1889	180	304	433	737
1890	226	244	351	595
1891	257	263	371	634
1892	269	298	442	740
1893	316	327	385	712
1894	362	331	472	803
1895	355	374	519	893
1896	346	382	529	911
1897	369	398	528	926
1898	383	324	577	901
1899	383	298	456	754
1900	373	268	520	788
1901	423	312	646	958
1902	391	304	529	833
1903	383	293	522	815
1904	391	220	394	614
1905	450	383	585	968
1906	431	235	467	702
1907	471	300	420	720
1908	470	281	531	812
1909	550	227	422	649
1910	533	280	506	786
1911	499	222	416	638
1912	537	278	392	670
1913	499	180	369	549
1914	467	148	315	463
1915	403	132	236	368
1868–1915	13,508	12,303	18,238	30,541
Annual average	281	256	380	636

* From "The Locomotive," published by the Hartford Steam Boiler Inspection and Insurance Company.

STATISTICS OF BOILER EXPLOSIONS IN THE UNITED KINGDOM, 1883–1913*

YEARS ENDING JUNE 30	Number of explosions	PERSONS		
		Killed	Injured	Killed and injured
1883	45	35	33	68
1884	41	18	62	80
1885	43	40	62	102
1886	57	33	79	112
1887	37	24	44	68
1888	61	31	52	83
1889	67	33	79	112
1890	77	21	76	97
1891	72	32	61	93
1892	88	23	82	105
1893	72	20	37	57
1894	104	24	54	78
1895	114	43	85	128
1896	79	25	48	73
1897	80	27	75	102
1898	84	37	46	83
1899	68	36	67	103
1900	59	24	65	89
1901	72	33	60	93
1902	68	30	55	85
1903	69	22	67	89
1904	60	19	45	64
1905	57	14	40	54
1906	54	25	21	46
1907	77	28	65	93
1908	73	23	50	73
1909	93	12	53	65
1910	103	14	62	76
1911	100	13	61	74
1912	106	30	75	105
1913	80	31	42	73
1914	68	22	74	96
1915	61	22	55	77
1883–1915	2,389	864	1,932	2,796
Annual average	72	26	58	84

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* From the "Report to the Secretary of the Board of Trade Upon the Working of the Boiler Explosions' Acts, 1882 and 1890," London, 1916.

Statistics of Boiler Explosions in Germany, 1877—1914*

Years Ending December 31	Explosions	Persons		
		Killed	Seriously injured	Slightly injured
1877	20	21	14	23
1878	18	7	4	9
1879	18	36	10	32
1880	20	10	5	14
1881	11	8	18	21
1882	11	19	14	15
1883	14	23	8	24
1884	14	12	11	22
1885	13	11	2	9
1886	16	10	5	8
1887	14	17	5	61
1888	15	4	3	4
1889	16	6	5	17
1890	16	9	1	11
1891	10	....	3	7
1892	18	12	11	18
1893	10	6	5	10
1894	35	12	9	13
1895	23	20	23	31
1896	21	10	2	13
1897	21	17	3	19
1898	18	3	7	21
1899	14	13	11	11
1900	13	6	1	17
1901	17	10	3	14
1902	17	7	7	10
1903	10	6	....	5
1904	15	5	5	8
1905	9	4	2	3
1906	15	5	....	3
1907	16	7	4	5
1908	11	3	2	8
1909	9	5	8	23
1910	8	3	2	2
1911	8	15	5	10
1912	11	10	13	10
1913	9	8	6	12
1914	8	2	2	7
1877–1914	562	382	239	550
Annual average	15	10	6	14

* From the "Vierteljahrshefte zur Statistik des Deutschen Reichs," Drittes Heft, Berlin, 1915.

According to the statistics of Germany for the year 1914, there were only 8 explosions of stationary boilers in that country in that year. There had not been as many as 20 in any single year of the 17-year period, 1898 to 1914, inclusive. During that same 17-year period no fewer than 7,634 boiler explosions were reported in the United States, 467 of which occurred in 1914. In the United States during the last 48 years there has been an average annual number of 281 boiler explosions reported, with an average annual death list of 256 and an average annual non-fatal injury list of 380. In Germany during the 38 years, 1877 to 1914, the average annual number of stationary boiler explosions was only 15 and the average number killed per year was only 10, with 6 seriously injured and 14 slightly injured per year. In the United Kingdom during the 31 years, 1883 to 1913, there were 73 boiler explosions reported as an annual average, with 27 killed and 58 injured. German and English methods of boiler inspection and boiler explosion investigations apparently have been much more efficient during these years than in the United States.

Although the German statistics are exclusive of boilers in the railway service and in the army and navy they included 103,210 stationary boilers, 29,964 traction or other movable boilers and 6,104 marine boilers as long ago as January 1, 1899, when the last boiler census was taken. It is not probable that more than one-fifth of the boiler explosions reported in the United States are locomotive boiler explosions, yet the number of persons killed in the United States was 23 times the number reported killed in Germany during the five-year period, 1910 to 1914, after due allowance is made for the larger aggregate population of the United States.

The following table will be of interest, although I well understand that the method of comparison is subject to criticism. The contrast, however, between the United States on the one hand and Germany and the United Kingdom on the other is so striking that no reasonable explanation, save that based upon the comparative methods of universal inspection and rigid inquiry can be adduced to account for the differences.

Although there were only 8 stationary boiler explosions reported in Germany in 1914, yet the official report on these fills 14 quarto-size pages. Similarly in England, beginning with 1883, there has been published annually full details of all boiler explosions occurring under the Boiler Explosion Act of 1882, which was slightly modified in 1890 by a supplemental act.

In the United Kingdom there were 80 boiler explosions reported during the year ending June 30, 1913. There were 14 formal investigations ordered by the Commissioners during the same year and the responsible parties were discovered in 9 of these cases and an aggregate of £317 was ordered paid by the persons found negligent, or approximately $1,500.

The boiler explosion fatalities in the United States, the United Kingdom and Germany are compared on the basis of aggregate populations in the following table:

BOILER EXPLOSION FATALITIES COMPARED ON BASIS OF TOTAL POPULATION
(Rate per 1,000,000 population)

YEARS	UNITED STATES			GERMANY			UNITED KINGDOM		
	Population	KILLED		Population	KILLED		Population	KILLED	
		Number	Rate		Number	Rate		Number	Rate
1868–69	74,729,000	373	5.0	....	......	......	....	......	......
1870–74	203,182,000	1,133	5.6	....	......	......	....	......	......
1875–79	231,905,000	824	3.6	*132,374,000	*64	0.5	....	......	......
1880–84	262,571,000	1,298	4.9	228,592,000	72	0.3	†71,174,000	†53	0.7
1885–89	293,495,000	1,373	4.7	238,356,000	48	0.2	182,988,000	161	0.9
1890–94	325,533,000	1,463	4.5	251,365,000	39	0.2	190,769,000	120	0.6
1895–99	358,045,000	1,776	5.0	267,978,288	63	0.2	199,962,563	168	0.8
1900–04	395,950,565	1,397	3.5	288,790,648	34	0.1	209,443,503	128	0.6
1905–09	435,894,790	1,426	3.3	310,060,790	24	0.1	218,722,972	102	0.5
1910–14	475,839,030	1,108	2.3	328,605,594	38	0.1	227,551,221	110	0.5

* 1877–79. † 1883–84.

The following data for Prussia are also particularly interesting:

STATISTICS OF STEAM BOILER EXPLOSIONS IN PRUSSIA, 1890-1912*
(Rates for 100,000 boilers or other steam apparatus).

YEARS	STEAM BOILERS						OTHER STEAM APPARATUS					
	Number of boilers exposed to risk one year	Number of explosions	KILLED		INJURED		Number of Dampffässer exposed to risk one year	Number of explosions	KILLED		INJURED	
			Number	Rate	Number	Rate			Number	Rate	Number	Rate
1890-94	340,729	55	23	6.75	63	18.49	20,348	15	10	49.14	13	63.89
1895-99......	401,940	68	33	8.21	98	24.38	27,705	20	14	50.53	24	86.63
1900-04......	483,007	55	25	5.18	41	8.49	47,255	14	6	12.70	14	29.63
1905-09......	535,532	44	21	3.92	50	9.34	62,464	17	6	9.61	14	22.41
1910..........	113,440	6	3	2.64	4	3.53	14,235	2	......	......	1	7.02
1911..........	115,018	6	15	13.04	14	12.17	14,732	2	4	27.15	12	81.46
1912..........	115,856	8	8	6.91	16	13.81	15,202	3	1	6.58	3	19.73
1890-1912....	2,105,522	242	128	6.08	286	13.58	201,941	73	41	20.30	81	40.11

* Compiled from data published in Deutsche Versicherungs-Zeitung, Berlin, Nov. 30, 1913.

According to these statistics steam apparatus other than boilers, "Dampffässer," are even more dangerous to life than steam boilers proper, "Dampfkessel." In Prussia during the 23-year period, 1890-1912, the average annual number of deaths resulting from Dampffässer explosions was 20.3 per 100,000 Dampffässer against a rate of 6.1 for Dampfkessel, or steam boilers. The injury rates were correspondingly different.

To make the conditions in the United States more concrete, I have assembled together in chronological order fifty cases of boiler explosions that have occurred during the period, 1865-1916. The list has been gathered largely from "The Locomotive," a very instructive publication issued monthly by the Hartford Steam Boiler Inspection and Insurance Company. This list is interesting from the viewpoint of the variety of the structures damaged. No structure with steam apparatus inside it would appear to be immune against explosion. In these fifty explosions an aggregate of 1,755 persons were reported to have been killed and probably more than an equal number were seriously injured.

A CHRONOLOGICAL LIST OF DISASTROUS BOILER EXPLOSIONS IN THE UNITED STATES, 1865–1916

Date	Location	Kind of structure	Estimated monetary damage	Number killed
April 27, 1865	Near Memphis on Mississippi river	Steamboat "Sultana"	?	1,238
1871	New York	Ferryboat "Westfield"	?	106
Oct. 29, 1880	East River, N. Y.	Tugboat	$15,000	2
Mar. 11, 1880	Frankfort, Ind.	Flax mill	10,000	10
July 6, 1880	Dunkirk, Ohio	Thresher engine	?	9
Feb. 18, 1889	Hartford, Conn	Hotel	?	23
Mar. 6, 1895	Detroit, Mich	"Journal" Building	?	37
Aug. 19, 1895	Denver, Colo	Hotel "Gumoy"	?	22
Sept. 1, 1899	Pittsburg, Pa	Republic Iron Works	6,500	8
Jan. 3, 1899	Shreveport, La	Cotton Oil Co. (mill)	?	4
Aug. 22, 1899	Appleton, Wis	Woodworking mill	20,000	4
July 22, 1899	Helena, Ark	Gas Co. (works)	12,000	1
Aug. 19, 1899	Pittsburg, Kansas	Vitrified paving brick works	15,000	3
1902	Chicago, Ill	Swift and Co., packers	150,000	15
Nov. —, 1902	Lebanon, Pa	Iron & Steel Mfg. Co	8,000	12
Dec. 21, 1903	St. Louis, Mo	Traction Co	75,000	8
Nov. 6, 1904	Columbus, Ohio	State Univ., harvesting machine	?	2
May 26, 1904	Louisville, Ky	Steamboat Fred Wilson	?	11
Aug. 25, 1904	Green Bay near Lakeland, Fla	Phosphate company	10,000	4
Dec. 28, 1904	Walville, Wash	Milling	13,000	4
Jan. 4, 1905	Hunting, W. Va	Towboat "Defender"	?	8
Mar. 20, 1905	Campello, Brockton, Mass	Emerson Shoe Co	250,000	58
July 21, 1906	San Diego, Cal	U. S. S. Bennington	?	62
Dec. 6, 1906	West Lynn, Mass	Shoe factory	375,000	....
Nov. 30, 1907	Brunswick, Me	Railroad station	4,000	2
Dec. 12, 1907	East Greenwich, R. I.	Co-educational academy	20,000	....
Sept. 26, 1907	Pleasant Hill, Mo	Greenhouse	75,000	....
Feb. 14, 1908	Adrian, Mo	High school	4,000	2
Dec. 9, 1908	Allentown, Pa	Steel and wire company	100,000	3
Feb. 3, 1908	Northumberland, Pa	Puddling department, nail mill	10,000	8
June 5, 1908	Point Hueneme, Cal	U. S. S. "Tennessee"	?	7
Aug. 10, 1908	York, Pa	Iron Co	20,000	10
Dec. 1, 1909	Shelton, Conn	Woolen mill	200,000–250,000	1
Dec. 6, 1909	Kansas City, Mo	Realty Company Bldg	47,500	2
Oct. 25, 1909	Milwaukee, Wis	Pabst Brewing Co	114,000	1
June 15, 1909	Denver, Colo	Gas and electric company	60,000	4
Nov. 21, 1909	Plaquemine, La	Mississippi river steamer	?	7
April 27, 1909	Kerrick, Minn	Sawmill	?	5
Aug. 28, 1909	Hayneville, Ala	Cotton gin and grist mill	10,000	3
Oct. 20, 1910	Greenpoint, L. I.	American Mfg. Co	150,000	6
Jan. 17, 1911	?	U. S. S. "Delaware"	?	8
Dec. 2, 1911	Reader, Ark	Lumber company	25,000	3
Dec. 15, 1911	Fredonia, N. Y.	Steam heating company	150,000	1
Oct. 29, 1912	Salem, Ore	Bank Bldg	?	3
Dec. 5, 1912	Wilsondale, W. Va	Saro mill	?	5
Feb. 19, 1912	Bond, Miss	Lumber company	27,000	4
Jan. 14, 1913	Saylesville, R. I.	Dye works	26,000	2
Dec. 28, 1913	Raleigh, N. C.	Roundhouse Seaboard Air Line	?	9
Nov. 15, 1916	Stroudsburg, N. J.	Locomotive	?	4
Nov. 20, 1916	Greenpoint, L. I.	Tugboat	?	4

There are, however, some good reasons for believing that in the near future the United States will approach nearer to England and Germany in this matter of the conservation of life and property against the disasterous results of too numerous boiler explosions. On February 17, 1911, the Boiler Inspection Act was enacted, entitled "An Act to Promote the Safety of Employees and Travelers upon Railroads by Compelling Common Carriers engaged in Interstate Commerce to Equip their Locomotives with Safe and Suitable Boilers and Appurtenances thereto." Bills to effect this legislation were introduced in Congress as early as 1909, the first being a bill introduced in the Senate March 22, 1909; and a similar bill was introduced in the House on May 17, 1909. Other similar bills were introduced and hearings were had upon these bills in the interim between 1909 and the final enactment of the law of February 17, 1911. The hearings made it clear that such legislation was necessary both in the interest of the railway employees and the public. This act provided for the appointment by the President of the United States of a chief inspector of locomotive boilers and two assistant chief inspectors. The effective date of the law was July 1, 1911. The act provided that the territory comprising the several States and territories of the United States was to be divided into fifty locomotive boiler inspection districts. These divisions were to be so arranged as to take into proper account the number of locomotives in each district, the density of traffic, the number and location of inspection repair points, the facilities for making repairs, the amount of travel necessary to properly cover the district and the most advantageous location for the office of the inspector. As finally determined upon, twenty-five, or exactly one-half of these inspection districts were located east of the Mississippi River and twenty-five west of that dividing line. Full details of the results thus far of this new and well-organized method of locomotive boiler inspection are contained in the first four annual reports of the Chief Inspector of Locomotive Boilers.

In the second annual report of the Chief Inspector of Locomotive Boilers the following statement was made: "Knowing that it would be impossible to correct at once all defective and improper conditions existing and that improvement must come as the result of a process of evolution rather than revolution, attention was first concentrated on the more serious accidents in an effort to reduce the number of fatalities, although no minor defect that could be remedied was neglected."

"The result of this policy is shown by a reduction of over 60 per cent in the number killed, and 10 per cent in the number injured by failures of locomotive boilers and their appurtenances during the fiscal year ending June 30, 1913, as compared with the preceding year."

And again, in this same report, the statement was made that:

> The practice of conducting a rigid, searching investigation of all accidents sufficiently serious to justify a report, with the sole object in view of determining the exact cause and having the proper remedy applied, has done much to reduce the list of casualties. The knowledge that such an investigation will follow every accident is an incentive to the railroad companies to maintain their equipment so that its condition cannot be shown to have caused accidents, and is also an incentive to the employees to perform their work in the most efficient and careful manner. Therefore, we have followed the policy of investigating every accident reported to this division. The investigation of accidents by Government inspectors whose only object is to promote safety, and who are therefore impartial, has directed attention to conditions which previously have been overlooked or ignored.

In the third annual report of the chief inspector the following statement was made: "In addition to the inspection work above shown, a careful investigation has been made of every accident reported in accordance with the provisions of the locomotive boiler inspection law. In each case active steps were taken to remedy any conditions or practices which could be shown to have caused or contributed to the cause of the accident, and this action has materially assisted in reducing the accident list."

Both in the Second and Third Annual Reports a recommendation was made that the provisions of the boiler inspection law be extended to cover the entire locomotive. In this connection I quote as follows from the Third Annual Report of the chief inspector:

> In this connection it seems appropriate to state that the inspectors now in the service are men of wide experience in railroad work, who were selected after passing a competitive civil service examination; and their three years' training as inspectors in addition to their previous experience and training, has eminently fitted them to perform the additional duties that such a law would impose in as satisfactory a manner as they do their present ones, and, it is not unreasonable to say, with equally good results.

It is of interest to note that these recommendations were favorably considered and the act of March 4, 1915, amended the locomotive boiler inspection law by extending its provisions to include the entire locomotive and tender and all other parts.

The first four years of the published experience under the law of March 17, 1911, makes it clear that the law was badly needed and that it is very effective for the purpose intended. The form of the reports is ideal, as detail statistics are given of the nature of the defects discovered, and brief statements are presented of the accidents in which persons were either killed or injured, and illustrations are given of typical defects and explosions. These reports are equal in their usefulness to those which have long been published officially in England, Germany and other European countries.

In the year ending June 30, 1912, the locomotive inspection service of the Interstate Commerce Commission discovered 173,231 defects in locomotive boilers in use on railways engaged in interstate commerce, and in 1915 the same inspection, even though more completely organized and more efficient on account of three years' previous experience, discovered only 87,955 defects. This represents a reduction of nearly 50 per cent in the number of defects discovered, showing clearly that in the period of four years there has been a very appreciable improvement in the locomotive boilers in use throughout the country. As additional evidence it may be stated that in 1912 no fewer than 3,377 locomotives were ordered out of service by the Interstate Commerce Commission on account of radical defects as against 2,027 in 1915.

The most noticeable results, however, of this special new service of the Interstate Commerce Commission are disclosed in the comparative statistics of locomotive boiler explosions and the resulting fatalities and injuries to persons. These statistics are presented in the following table:

Persons Killed and Injured in the United States by Locomotive Boiler Explosions*, 1912–1915

Year Ending June 30	Number of locomotives in service	Explosions		Persons Killed		Persons Injured	
		Number	Rate per 1,000 locomotives	Number	Rate per 1,000 locomotives	Number	Rate per 1,000 locomotives
1912............	62,074	856	13.8	91	1.47	1,005	16.2
1913............	63,870	820	12.8	36	0.56	911	14.3
1914............	65,340	555	8.5	23	0.35	614	9.4
1915............	67,490	424	6.3	13	0.19	467	6.9
1912–1915.......	258,774	2,655	10.3	163	0.63	2,997	11.6

* Compiled from the Annual Reports of the Chief Inspector of Locomotive Boilers, Interstate Commerce Commission, Washington, D. C.

The table given above shows a decline in the rate of locomotive boiler explosions from 13.8 per 1,000 locomotives in use in 1912 to 6.3 in 1915, or 54.3 per cent. The fatality rate per 1,000 locomotives in service due to explosions has declined from 1.47 in 1912 to 0.19 in 1915, or 87.1 per cent. The non-fatal injury rate has declined from 16.2 per 1,000 locomotives in use in 1912 to 6.9 in 1915, or 57.4 per cent. I know of few instances in which such remarkable results have been achieved in so short a period of time. Certainly no stronger argument should be necessary in support of the conclusion that a thoroughly efficient inspection of boilers and other steam apparatus is desirable and necessary both for the protection of lives and the saving of property loss. To further emphasize the important results already achieved in the saving of lives and in the reduction of non-fatal injuries in this inspection service of locomotive boilers the following table is presented, showing in detail the number of persons killed and injured during the period 1912 to 1915, with distinction of the occupations of the victims:

PERSONS KILLED AND INJURED IN THE UNITED STATES IN LOCOMOTIVE BOILER EXPLOSIONS

1912–1915

OCCUPATION	1912		1913		1914		1915		1912–1915	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Members of train crews:	53	908	32	834	17	530	13	405	115	2,672
Engineers	22	310	12	268	8	187	5	150	47	915
Firemen	19	491	12	478	8	290	7	207	46	1,466
Brakemen	8	79	6	79	.....	46	.....	40	14	244
Conductors	4	16	2	7	1	6	1	4	8	33
Switchmen	.....	7	.....	2	.....	1	.....	4	.....	14
Roundhouse and shop employees:	29	97	2	70	6	73	.....	38	37	278
Boiler makers	2	3	.....	10	1	18	.....	5	3	36
Machinists	7	11	.....	11	2	5	.....	10	9	37
Foremen	1	4	.....	4	1	6	.....	2	2	16
Inspectors	1	2	.....	3	.....	3	.....	3	1	11
Watchmen	3	6	.....	8	1	7	.....	1	4	22
Boiler washers	1	4	.....	4	.....	8	.....	9	1	25
Hostlers	.....	5	1	6	.....	9	.....	6	1	26
Other Roundhouse and shop employees	14	62	1	24	1	17	.....	2	16	105
Other employees	3	3	.....	4	.....	10	.....	2	3	19
Non-employees	6	2	2	3	.....	1	.....	1	8	7
	91	1,005	36	911	23	614	13	*467	163	*2,997

* Twenty-one injuries not distributed by occupation of persons injured.

According to this table there has been a reduction in the number of persons killed from 91 in 1912 to 13 in 1915, and of the number of persons injured from 1,005 in 1912 to 467 in 1915. All of the persons killed in 1915 were members of train crews, 5 being locomotive engineers, 7 locomotive firemen, and 1 a conductor. In 1912, 53 of the deaths were of members of train crews, 29 were roundhouse men and shop employees, 3 were other railway employees and 6 were persons not employed by railway companies.

It is of special interest to note that it was brought out in the hearings before the sub-committee of the Committee on Interstate Commerce, United States Senate, when the boiler inspection bill was being considered that during the period from July, 1904, to June, 1909, no fewer than 240 trainmen and 25 other railway employees were killed as the result of locomotive boiler explosions, and 3,364 trainmen were non-fatally injured; 272 other railway employees were non-fatally injured. In addition 20 persons other than employees were non-fatally injured during this five-year period. The statistics in detail are as follows:

Locomotive Boiler Explosions, Compiled by the Interstate Commerce Commission During the Period July, 1904, to June, 1909, Inclusive

Time	Trainmen		Other Employees		Total Employees		Other Persons		Grand Total	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
July, 1904, to June, 1905..	38	564	10	53	48	617	.....	8	48	625
July, 1905, to June, 1906..	45	610	1	41	46	651	.....	1	46	652
July, 1906, to June, 1907..	70	768	7	67	77	835	.....	6	77	841
July, 1907, to June, 1908..	54	767	4	56	58	823	.....	3	58	826
July, 1908, to June, 1909..	33	655	3	55	36	710	.....	2	36	712
Total...............	240	3,364	25	272	265	3,636	.....	20	265	3,656

A review of the available information discloses the fact that the United States is still in an unfavorable situation as compared with other countries like England and Germany in this important matter of steam boiler explosions. There is reason to hope, however, that a better day is dawning. The locomotive boiler inspection service of the Interstate Commerce Commission, the wonderfully efficient inspection service of the steam boiler insurance companies, the experience of England, Prussia and Germany, in their thoroughly effective administration of boiler explosion acts, all point the way toward a remedy for the present intolerable conditions in the United States.

It will probably be many years before all of the States adopt efficient measures against boiler explosions, but in the meantime the negligent States will have little excuse for inaction, first, because the boiler explosion peril is real and large, and, second, because evidence of how it may be greatly reduced by supervision and inspection by qualified experts is abundant and positive.

Before closing I may call your attention to the fact that the American Society of Mechanical Engineers appointed a special committee, September 15, 1911, to "Formulate Standard Specifications for the Construction of Steam Boilers and Other Pressure Vessels and for Care of Same in Service." This Committee of Eight secured the assistance of eighteen other experts and made its first report in 1914. The Industrial Accident Commission of California has adopted that report as the basis for its Boiler Safety Orders, effective January 1, 1917.

There is still urgent need for uniform and adequate rules and specifications for boiler construction, installation and use, but the problem is at last in process of solution in this country.

One more important point and I am done. Steam boiler insurance companies owe their success to efficient inspection by thoroughly qualified experts. Boiler inspection by the State governments in this country has too frequently, I fear, been delegated to political rather than mechanical experts. This charge is more than a suspicion. Such a condition is intolerable and should be ruthlessly eradicated at once.

The Stationary Engineers of Minnesota at their annual meeting this year in St. Paul, September 12, asserted that steam boilers in Minnesota are not inspected carefully enough to insure safety to life and property. That Association is going to ask the Legislature to provide for the appointment of a chief boiler inspector who shall be a college graduate of engineering and qualified to inspect boilers. It will also ask that the Governor appoint a board composed of faculty men and leading engineers who shall conduct examinations for district boiler inspectors.

It was stated that "the present boiler inspector's officers are political appointments made by the Governor and the State Senators" and that "in many cases the boiler inspectors are not qualified for their work."

GENERAL DISCUSSION

COMMISSIONER WIARD: Now we will open this meeting to a discussion of these two papers. Both of the gentlemen are ready to discuss the matter with you.

MISS HARRIET MILLER: I would like to ask the very able gentlemen who have been discussing these subjects, if the speeding-up system could be eliminated if it would not to a very large degree prevent many accidents

COMMISSIONER WIARD: Do you want to ask that question of the first speaker or the last?

MISS MILLER: The first one.

COMMISSIONER JACKSON: My subject was on elevators, cranes and moving machinery. I admit that the fellow who runs an automobile fifty miles an hour causes more danger than if he is running five miles. I want to say this — and it is very important, you labor men and you capital men — to deal with your human beings, requires as much judgment, intelligence and good sense as it does to deal with that $60,000 boring mill we spoke about this morning. And if you run that boring mill beyond a certain stage of its capacity, some of its parts exceed the elastic limit, and when you have exceeded the elastic limit that boring mill will never do what it would at the beginning. If you run that mill properly it may last a generation, if it doesn't go out of style. Now just so with the human being. For many years many fellows who would be called efficiency experts were dealing with that sort of thing, getting the greatest output out of a machine, and out of a shop, and they gave no attention to the endurance of the human being. I am happy to say that both the employers and the experts are waking up to the fact that a workman who gives a large output for a lifetime is better for that particular establishment, for its industry and for the country, than the workman who can work only a few years because he is driven beyond the elastic limit.

DR. A. D. RISTEEN, Travelers Insurance Company: I was very specially interested in Dr. Crum's paper, for a reason that will be immediately evident, namely, that I was the person who, for twenty-three years, kept those statistics of boiler explosions, so far as stationary boilers are concerned. I do not know how I had the courage to keep at this thing for so many years, for certainly it was a very arduous job, but, so far as I know, I am the only person who ever did keep statistics of that kind. And they are very interesting to look back at now, and as I said, I was especially interested that Dr. Crum had looked into them so carefully. There are one or two things I would like to say in regard to them, because I believe I never have said it before. As you look over the statistics you will see, as Dr. Crum has said, that the number of persons killed and injured from explosions gradually falls off with the progress of time, so that in later years it is very much better than it was in the earlier years. Now I wish, as a representative of a boiler inspection service, that I could claim that that was due wholly to inspection service. I have no doubt it was largely due to that, and in pointing out any other causes I am not to be understood as criticising any of Dr. Crum's conclusions, but as simply giving a little additional information. In the first place we have better material in steam boilers now than we used to have. The steel that is used at the present time can be had of a very good grade, whereas when steel was new in those days you were likely to develop the form of hidden cracks, known as the lap-joint crack, which has been responsible for a good many catastrophic explosions. Furthermore, the general design of boilers has changed in that period. The butt joint has replaced in power boilers the lap joint. Another way in which the type of boilers has changed is by the increasing number of water tube boilers that are used. When I first started getting those statistics the horizontal tubular type was almost the universal type in this country. And now of course there are very many more water tube boilers, and I would not give you the impression that the water tube boiler is free from danger, but when you have an accident from a water tube boiler it is more likely to be a small accident. In other words, you are likely to have more accidents, but they will not be of the same average magnitude as of boilers of the older type. Another thing, as time went on in my keeping those records I got either more industrious or possibly more honest, or learned better how to do it, and in my later statistics I certainly did include smaller accidents than I knew how to find when I started out. So that would tend to reduce the seriousness of the explosions, so far as you could judge from the statistics. Lastly, I would like to say in corroboration of Dr. Crum, that the difference between the United States on the one hand and Great Britain and Germany on the other is even worse than you would judge from the statistics that have been published, because in this country, except possibly for certain localities, there is no obligation resting upon a man to report boiler explosions, whereas in Great Britain and in Germany every explosion has to be reported. Therefore the disparity cannot be explained by supposing that we are more industrious in gathering our statistics, because I know that in spite of my care, more or less explosions got past me, and I would learn of them afterwards when it was too late to include them. But over on the other side everything must be reported officially. Therefore their statistics must be more complete than ours, and yet the balance is most wofully against us in spite of that fact.

MR. CRUM: I should like to add a few concrete statistical illustrations to Commissioner Jackson's excellent paper — particularly in reference to elevator fatalities in this country.

Unfortunately we have no reliable data for the whole United States on persons killed in falls down elevator shafts and by elevator crushings. We do, however, have some extremely interesting and suggestive data of this kind for certain localities and sections of the United States. In New York city during the ten years ending with 1909 there were 671 elevator fatalities reported to the local Department of Health — or an annual average of 67. More than one-half of these, or 382, resulted from crushings and 289 were due to falls down elevator shafts. For the period 1910 to 1915 it is not possible to get a complete report of the elevator fatalities in New York City, but during those six years, there were no fewer than 253 fatalities by elevator crushings alone in that city, as reported to the local Department of Health.

In Chicago, during the seventeen years, 1890 to 1906, there were 291 elevator fatalities reported to the local Department of Health, and in St. Louis during the ten-year period, 1905 to 1914, there were 83 such deaths. In San Francisco, during the five years, 1908 to 1912, there were 47 elevator fatalities reported in the local health reports.

In the State of Massachusetts, during the period 1887 to 1913, there were 309 elevator fatalities, details of which in the form of brief accounts are available in the annual reports of the District Police of the Commonwealth. These elevator fatalities in Massachusetts are limited to such as occurred in factories and other buildings directly under the supervision of the District Police.

From more or less fragmentary data as a basis, it would appear that 1,300 elevator fatalities per year is a reasonable estimate of the loss of life by this cause at the present time in this country.

In England and Wales, during the ten years 1905 to 1914, there were 359 elevator fatalities reported by the Registrar General, 336 being males and 23 females. About one-eighth of these fatalities in England and Wales were to persons under the age of fifteen years. Specifically, 3 were of ages under 5 years, 2 were of ages 5 to 9 years, and 41 were of ages 10 to 14 years. Just as the reporting of these accidents is more universal and detailed in England and Wales so also is the supervision of elevators or "lifts" apparently more thorough and efficient in England and Wales than is generally the case in this country. In all England and Wales there apparently are fewer elevator fatalities per year than in the single city of New York. To illustrate, in the year 1914 there were 32 elevator fatalities reported for England and Wales by the Registrar General, while in New York City there were 45 fatal elevator crushings reported by the Department of Health. It is a fairly safe assumption that there were nearly as many more (45) persons killed in New York City that year by falls down elevator shafts.

In conclusion I may say that the available data, fragmentary as they are, seem conclusively to prove that the universally safe elevator and safe elevator shaft in this country are still ideals rather than realities and that much yet remains to be done before the elevator accident problem is completely solved. At the present time elevator accidents and boiler explosions are among the most important of the many machinery hazards in the United States.

COMMISSIONER JACKSON: I would like to add to those statistics this evidence. That probably three-fourths, as I gathered the figures, are due to either the door being left open on the shaft, or the door being opened and the man trying to jump on and getting crushed, which results from not having a mechanical interlock.

MR. BURKE, Chief Factory Inspector, Ontario: I am much interested in the papers read here this morning. We have too many elevator accidents. We have them over our way and you have them here. And while Mr. Jackson spoke on this interlocking device to keep the gate closed while the car is away from that floor, I would like some additional information as to how it might be worked on other than an elevator operated by electricity, such as a hydraulic elevator. That is the difficulty we find over our way, to find something that will close that gate when the car leaves the floor. There is another feature too, that adds to elevator accidents, and that is that our law of course requires the same as your law, that the top of the car must be covered. Now that cover over the top of the car creates a hazard, as was shown by Mr. Jackson in the accident where the repairman was caught between the first floor and the top of the car. There is a probability that that type of construction over the cross of the elevator car would crush a person as they entered a car or left it, providing the car started down before they were entirely through the door. Now the opening of the gates and likewise the top guard over the car are two factors in regard to increasing the general accidents that happen in our Province. I believe if we could solve that, our elevator accidents would be greatly reduced. There are a great many attempts made at such things by regulations, etc., but it seems to me that we want something practical, something that will work. Elevator experts of various kinds, manufacturers and elevator operators have got together, but we have not been able to solve that difficulty in a practical way. It is true you can go to work and provide mechanical devices, but the trouble with the inventions of men are usually this, that they fail at times and of course then the accident happens. I do not know how we are going to overcome the dangers from elevators in this country, which, as you gentlemen all know, are increasing very rapidly. I understand the reason for there not being so many elevator accidents in England and Wales is that they have not got so many high buildings devoted to industry as we have in this country or Canada, and consequently the number of their elevators is a great deal less.

Mr. Earl B. Morgan, Safety Engineer, Norton Company: I can give Mr. Burke information on that subject of hydraulic elevators. There is a positive acting device, which I have tried and which is very good indeed. It is made by the Safety Engineering Company, of Providence, Rhode Island. It acts in a very positive way. It is a little expensive, but it is fool proof.

Mr. Elberty, New York Compensation Inspection Rating Board: I think in all fairness there should be some place on your program for the subject of the speeding-up system, from an intelligent standpoint. Not really as a representative of our Bureau, but rather as a practical mechanical foreman and a man-handler, I want to say that I think it is rather misunderstood by the people here. When the high speed steel came into use it was necessary to teach workmen that their machines could be run at a high rate of speed at their work on the lathe. I know I had to be shown and so did my fellow-workmen. Later, as a man-handler, particularly in the electrical lines, it was necessary to teach them that they might make too many motions. Just as an illustration to show that there is something in this system, and I want to say that I have never heard of any one being injured because he was shown he could do his work by less motion, I had a good-sized boy in our shop who objected to the stop-watch and the motion system. I said you have no right to object to that because you make less motions to do the same kind of work than any man I ever saw. He was one of those natural workers. He made only one-third of the motions that the other fellows made to do the same amount of work. I have seen men in my work as factory inspector, working at lightning speed and right alongside of them other fellows putting forth apparently no effort and doing more work. That is the idea. It is not a speeding up of the human machine. You cannot liken it to the speeding up of a machine. It is simply doing the same amount of work with less effort. That is all there is to it, a scientific study of how to work. We should study of course how to eat and how to sleep, and we surely should study how to work. Let us look at this sensibly. I have worked all my life. I began work at 15 years of age. I am in this safety movement on account of a very important reason. I had a father killed on the railroad, an uncle pulled through the rolls of a machine, and a friend wrapped around a shaft. But speaking fairly from the point of a workman who knows his job, I say there is some sense in this motion study and the speeding-up movement.

COMMISSIONER JACKSON: As a matter of fact, learning how to do your work with an economy of expenditure of energy is not speeding up. Nobody said so. I do not say so. Nobody else said so. Mr. Emerson, the dean of your Safety Experts, agrees with just what I said, namely, that you must not drive the human machine beyond its elastic limit. Of course teach it to get the greatest results with a given amount of energy, but don't drive it beyond the elastic limit, or you do increase accidents and you do cause an injury to both the employee and the employer. That is worse than driving your $60,000 boring mill beyond the elastic limit.

MR. ELBERTY: I do not understand you. Let us go back to first principles. I would like to see the man or the foreman that can drive men beyond a certain speed limit. I have never had men working under me that I could drive beyond a certain limit. I have never seen the foreman that could drive me beyond a certain limit. But I want to tell you what does drive them. You take a piece work factory, and I do not care what line you take it in, you will find two or three fellows there out of 18 or 20, that is about the ratio, one out of 10, who will be willing to work themselves to death to prove that the price set is too high. It is the man that kills himself. There was one man in our own gang that used to kill every price that we got on the job. You will find one in every ten in piece work factories. They call them "Hog." Now those fellows would kill themselves, I don't care what price you set. I have seen fellows working at sewing machines over on the East side in New York, that were simply working themselves to death, and you go in there and you say, why, that poor fellow, he has to run two sewing machines sewing buttons on, but when you get down to look at the poor fellow's daily wages you are surprised. There are some men pressing trousers, it is awful the way fellows have to push a flatiron, but they made more money than I used to make turning out high priced stuff on a lathe. I have seen girls on the West side in New York city, making fine dresses. I saw their payroll. The lowest paid girl in the shop went to work at half past eight and quit at half past five, $25 a week. I have seen their pay rolls at $36 a week. Nobody is driving them to death. It is a pleasant death for them.

MR. HAUSTEIN, American Lithographic Company: Regarding the condition of employment to-day, we find it quite hard to get employees to stay. We cannot get all the required help we want and we find we have spent quite a lot of money trying to get help. And in piece work, a good many employees remove the guards on machinery. I believe there was something going to be taken up in the law, providing a penalty from employees who remove those safeguards. I think that is up to the officials to act on that, for it is a condition we find very serious at the present time. We cannot afford to discipline employees at the present time, for if we do they will simply leave us and go somewhere else. On the wire stitching machines we find that girls remove the guard over the saddles in order to turn out a greater amount of work, and if we discipline them they will go, and the next batch will do the same thing. I think it is essential for the State to see that the employees are punished. The employers cannot cope with it.

COMMISSIONER LYNCH: What would you have the officials do?

MR. HAUSTEIN: If you have got to discharge any employee that does it you cannot get help at the present time.

COMMISSIONER LYNCH: It all comes back to the question of the employers wanting the State or the department to do that which they are unwilling to do themselves. The question of the application of discipline to an employee who declines or refuses to use a guard, why, if the State department was to properly supervise that one activity alone it would require more than a thousand inspectors, and an inspector in each shop continually, because just as soon as the discipline is applied and the inspector leaves the shop, the man refuses to use the guard just the same as he did before, especially if he knows that the employer will stand for that kind of practice, and unless we can secure the co-operation of the employers, why the real enforcement of the law will depend on the number of inspectors that we have. And let me say this in connection with the references to the practices in Germany and England, where they have had these rigorous laws for many more years than we have had them in this State or this country, that there is an understanding that the laws are made to be lived up to. Now we haven't got to that here yet. The general proposition here is that if you are not caught the laws are made not to be lived up to, and if you are caught they are made to get out of it the best way you can. And we have that difficulty. We bring these men who decline or refuse to live up to the laws into court, and the judge gives them 30 or 60 days to see that they do it, and then we bring them in again at the end of 60 days, and they get 60 days more. It runs all through just like that. All through these courts. It is almost impossible to secure the cooperation of the courts in the enforcement of these laws, and it is unfortunate that we could not have the magistrates of the State here, the magistrates who are charged with the duty of court enforcement here to-day and to-morrow and the next day in order to be educated also. In connection with this matter of the enforcement of the law, it all comes back to the question, it is the same old proposition, that the State must do a thing that the employer himself is unwilling to do. So far as the employee is concerned, the discharge of one man for failure to use the guards, the failure to wear goggles, would have a more salutary effect in the factory than any other one thing that could be done. But we are met with the statement here, and it is not unusual, that it is better to incur the risk of paying thousands of dollars in compensation rather than discharge a more or less competent employee who insists on setting a bad example to all the other employes in the shop.

MR. KOHLER, Millwrights Union, No. 740, Brooklyn: As representing 740 millwrights, I would like to make a few remarks answering Mr. Lynch. I might say that the organization which I represent is composed of about 180 men. We have been in existence over 38 years. We have a very high standard of examination, and we have on our minutes reports of accidents. Of course we always follow these things up, and we have come to the conclusion, and have come to a sort of an understanding, that if the mechanic, the millwright who is employed in setting up this machinery, if he were licensed by the State, we would have an inspector in every factory, without any expense to the State, a man, a competent man, because we have found in all these years that most of the accidents are caused through the improper installation of the machinery by inexperienced help. Now I will illustrate the point of licensing the man who sets up the machinery and giving him the power that an inspector has. We will take a line shaft. We all know the law says that there shall be no projecting set screws on a collar. I dare say in 80 per cent of the factories you will find these projecting set screws in collars, and that is where the man is caught, where his clothing is caught. They say he should not wear loose clothing around a factory. It would take a man with an Annette Kellerman suit on to be safe. In a factory building in Brooklyn there was a big countershaft there traveling at about 3800 revolutions a minute, and there were two drive pulleys. They were working within about four inches of one another. There was a six-inch belt on one of them, and it slipped off and went in between the pulleys. The result was that about four tons of machinery were pulled off the ceiling, and it just happened to be at night time. If it had been in the day time about 50 men would have been killed. If a proper mechanic had installed this machinery, he would not have put these belts so that they would be caught in case they slipped off. I want to say that Local No. 740 of Millwrights are certainly looking for this safety first business. We always have been. And I am going to say that the conclusion we have come to is that if we were to license the millwright and have him undergo an examination by the State, we would have an inspector in every factory without expense to the State.

MR. THOMPSON, Eastman Kodak Company: I would like to know if, instead of discharging a man for some dangerous practice, he cannot frequently be turned into a safety-first enthusiast. I would like to mention one instance. We had one boy visiting another who was working on a punch machine, and this boy idly pulled the lever and down came the punch, narrowly missing the other boy's hand. Instead of discharging that boy, we had him brought down to the office and I interviewed him and then said I would state his case to the General Superintendent, and for him to go back to his work. He stayed there for about three hours worrying about his job, and finally he was brought down to the General Superintendent, and the importance of care to avoid accidents was explained to him, and how necessary it was to correct all dangerous conditions, and he was told that for the next three months he should report all dangerous practices and dangerous conditions that he saw in the shop. And he has done so. The first three months are past and he still continues in reporting the dangerous conditions. Instead of discharging that boy, we have turned him into a safety enthusiast.

COMMISSIONER LYNCH: That is a very fine proposition so far as the boys are concerned. We have little difficulty with the boys, or with the young men who go into the factories, but the difficulty of using the guards comes with the employees who have been working at their particular trade or calling for 20 years and have never been injured, and therefore they cannot see the importance of using the guard. He will say that the guard is in his way. He cannot work with it. It is easy to teach the boy or the young man, but it is the man who has been there 20 or 40 years, and has still got two hands and is going to have two hands until one of them is cut off. Another thing I want to refer to. That was the reference made by Mr. Jackson to the place that he discovered in this city that had an interior fire tower, with flimsy doors. He did not say it was a factory, but I assume it was a factory. Under our laws it would depend entirely on the height of the factory, the number of people employed, and as to whether there was a sprinkler risk, and as to whether the other exits were in accordance with the law, whether we could issue any orders against that particular exit or not. There are a number of questions that might govern it. Under the law, if there are the required number of exits that are properly protected, then the other exits are not under our jurisdiction, so that that might apply to that particular case. But when we take into consideration that the law has been in effect only about three years, and there are thousands of factory buildings and thousands of separate factories in the buildings, I think we have got quite a long distance in those few years.

COMMISSIONER JACKSON: I possibly was a little misunderstood, in regard to the fire tower. I can take Commissioner Lynch down to Pennsylvania on a two or three days' visit and I am very much afraid that he will be able to see dangerous conditions to a greater number than I can see in his State. I want to highly compliment the New York Commission on the good work they have done. I did not intend anything in my remarks as a criticism. With the women's law to enforce, the child labor law to enforce, the guarding of machinery to attend to, the fire hazards to attend to, and the thousand and one other things to attend to, an inspection force of one or two hundred that has done the amount of work that your's has done in New York, is a force to be proud of. And furthermore, when that force is hampered by laws that do not cover the subject as it should be covered, as Commissioner Lynch just referred to — and that is true in every State in this country, we are just learning to make the right laws and the right regulations — you will appreciate that the task is enormous. So that when I said, Commissioner Lynch, that I appreciated your work here in New York, and congratulated the people of New York on your work, I meant it, and I did not mean to cast any aspersions on New York or Syracuse or this Commission, which I admire.

MR. ELBERTY: Mr. Chairman, I am a Pennsylvanian. I have lived there for three generations. For the last six years I have been in New York, principally in New York City, but throughout the State. I was Chief Factory Inspector for the New York Rating Board for a little over a year, and now I am with the National Bureau and have factory inspectors all over the United States, and I know quite a number of the insurance companies' inspectors, and I want to say that it is the universal opinion of the men who have seen our State and also New York State, that the factory conditions in New York State are the best in the nation, beyond a doubt.

MR. GERNON, First Deputy, New York Industrial Commission: There have been a few good thoughts brought out here, and I have thought that for the benefit of those that are here, and who would take it back to their respective plants, we ought to give you a few illustrations of what we have to meet. Take the question of speeding up. We are far behind in this country in knowing how to work and knowing the art of working. That comes from the fact that we try to teach people our own way of operation with a teacher who doesn't know the operation himself. Consequently we find that kind of man that Mr. Elberty speaks of, who performs 30 more operations than another man would to do the same work. Let me give you an illustration of two men, or two hundred men. In a prominent plant in this country 200 men are performing the same kind of work. One of the 200 men can make 90 of the operations in a day. The best that the rest of the two hundred men can make is sixty. One man is abnormal. If you set the task or the pay at the basis of the man who can perform the 90 operations, you will probably kill the other 199. Now everybody should be taught to work and perform the greatest amount of work with the least effort. There is another phase of it, and that is the phase I had in mind in my paper when I compared the human being with a machine. The task is too great, you are sure to kill the human being. Now let me give you a little illustration of this. A complaint was made that a certain machine was killing the women that were working on it. It was an automatic weighing and packing machine. A girl picked up a 3½ pound package with a full bend of her back. The machine ran all day, and it packed eighteen of these packages a minute. Is there any man here that can do that work? When we got the complaint we went to the firm. I doubt if we had any jurisdiction at that time, and I doubt whether we would have now, but we went to the Superintendent, and he said: "Why, that is a successful machine. It is easy work." And we asked him to do the work. He did for the space of about three miuutes, and then said: "We will put two girls on the machine." We showed him how to do it with one girl, and no task, practically, at all. The girl could sit down and it was really very easy work. So that that is the thing we ought to study. It doesn't make any difference what they are doing, whether they are working on a machine or working without a machine, if the task is greater than the ability of the human being, something is going to break. So that is the problem, as we see it. Now we take the question of guards. As the inspector goes into the plant he sees the machine unguarded and he says, this machine should be guarded. I presume that this happens twenty times a day. Maybe more. The employer says: "Why, what is the sense of guarding that? I never had an accident. That machine has been here thirty or twenty years." And it is true. Probably he has had good careful workers. He may have had men who knew how to work, and he has had no accident. But the record of that machine in other places shows that it is a very dangerous machine. It shows that numbers of people have been severely injured. You cannot make him believe that it needs to be guarded. And when he comes to provide a guard he loses all reason. Within the last two months we had a complaint from one of the largest machine shops in the State of New York. The complaint stated that, since the guards had been installed, there had been more accidents than before. I thought that was rather interesting and I picked out one of the most capable inspectors we had, a practical mechanic and I sent him up there, and I said: "You get hold of the man that wrote this letter and let him prove to you that that is so and you come back here with a full report." What did we find? The employer had used up more iron to make guards than would be required to guard three plants of the same size. He lost his reason. He obstructed the light, and making the guards of perforated metal he had not turned or reinforced the edges, and as the workman had to put his hand in under the edge of the guard, in some instances, he was bound to get cut on the edge of the metal. And that is what the employer meant, or referred to, when he said they had had more injuries since the guards were put up than they had before. I know another instance in this State where there were 500 machines to be guarded. The man found fault because guards were required for so many, and he started to experiment, and before he went very far he sent for me. He wanted to know what I thought about it. I told him I thought very little of his guards because he had robbed the operator of his light. And it is natural that if you make a guard that is not practical, the operator will refuse to use it. He will object to the use of it, and that is particularly true with all of the men who are doing piece work. There are far too many guards provided in this State and in others that are practically useless.

Mr. ————: I would like to ask Mr. Haustein what assistance he would like from the Factory Inspection Department to maintain the guards?

Mr. Haustein: If there was something in the law that would govern, that we could point to, we would have something to establish a strict ruling on. The way we are fixed now the employees are very independent, and they will take off the guard, saying they are being hampered, and they cannot make as much money as they did before. And we find that the new hands come in and do the same thing. We tried to comply with the Rating Board's request, but it takes away some of the speed of the operators, and that is what they object to. The company I represent would be willing to do anything to co-operate with the department to do away with the trouble. I believe that if some penalty were established, and if we could show the employees that we could report them, and see that the penalty was enforced if they did not cease activity along that line, it would accomplish the desired results.

Mr. Ward: The company in which I work has plants in several states, including Canada, and I want to tell you that I have come to this conclusion, we don't need legislation as to guards; we need education. Now you can legislate and legislate. The books are so full of statutes that you don't know which way to turn. If you will get your foreman, gentlemen, when a new man comes on the job, to instruct that man how to use the guard and tell him what will happen if he doesn't use it — and you sometimes have to resort to drastic measures — I tell you, human nature the world around, will respond. I say to you that the foreman should not wait until the inspector comes. It is the foreman's duty to be there and see that the guard is used. Get your foremen together. Keep after them. You won't need to get after the State Commissioner. It is up to you. Go and spend thousands of dollars and then sit back and say: "My plant is guarded, no accidents," and see what will happen to you. You have got to sell safety to your men. It is a salesmanship proposition pure and simple. You have got to keep after them and after them. It is all in that word Education.

MR. BURKE: I would like to add to his explanation that we have such a law in our Province, but it is very hard to administer for this reason, that the factory inspector cannot, as Mr. Lynch said, be there all the time, and some of the employees will take these guards off. Of course there is a variety of guards. If you have a suitable guard, why we are quite prepared to enforce our act regarding the maintaining of that guard, but here is what we find. We find that the employer in many cases is not in sympathy with the matter, and as a consequence we are not able to secure his support, or any of the executive officers, and it is impossible to ascertain who removed the guard. Unless we can find out who removed the guard, it is hard to take it to the court and prosecute it. In one case, we took the employer and employee to court. The case is adjourned and comes up on Friday. I expect to get back home for that case. But we are hoping to impress upon the employers the necessity for co-operating with the officials in the administration of these laws, and likewise impress upon their employees the necessity of maintaining those guards. We believe that in the case we are handling at the present time it is a very suitable guard, but we are trying this new method. If the officers had the spirit of safety first themselves, they would impart that spirit to their employees. They might also impart the information to the officials and they would take care of it. I suppose one or two instances along that line would be very effective.

MR. ————: He has made the statement that some of his employees have difficulty in maintaining their piece work because of these guards. It is evident that if a guard hampers production, and makes it difficult or impossible for a piece worker to make the same money, the piece rate needs revision.

MR. HAUSTEIN: That investigation has been made, but we are trying to do two things. We are trying to comply with the law in guarding the machinery right, and we know the girls don't make as much money. Some of them are more speedy workers than others. But you cannot guard the machines and keep the speed up at the same time, and we figured the guarding of the machines is more important than the extra amount that they could make on the faster operation of piece work.

MR. EATON: Isn't one of the necessities — perhaps I am speaking without knowledge because I came in late — a recognition on the part of the inspector who orders a guard, that it be one which shall not hamper the worker and yet one which will protect the worker? Isn't there need also for a follow-up work to see that that particular kind of guard has been installed? I would like to know if the business of standardization would be possible to that extent.

Commissioner Wiard: I think this particular case was where the guard was apparently not satisfactory.

Mr. Thompson: The guard was absolutely satisfactory but it created an extra motion. If you use the guard you have got to decrease the speed.

Mr. Miles: I would like to know what steps have been taken to standardize the guarding of machinery. Since these laws went into effect, where we did not have guards to suit the inspectors we changed them according to the requirements of the first inspector, and later another inspector came in from the State and condemned certain guards that the first inspector had ordered, and we changed them again. Later an inspector from the insurance company came in and said that some of the guards we had were wrong, and didn't even comply with the laws of the State, and wanted them changed again. You will admit that that is confusing and expensive. I am wondering if there has been a standardization developed that would be satisfactory and would do away with this confusion.

Commissioner Wiard: Let me say that at the present time in the preparation of the Dangerous Machinery Code we have a representative from every organization, and in that code we will have those matters taken care of, and in the future when a guard is ordered it will be a guard that is satisfactory not only to the commission but to every other interested party.

Mr. Regula, American Museum of Safety: I might say that the program for Wednesday evening includes a paper by Mr. Cannon, of the Workman's Compensation Bureau, on the standardization of safety appliances, in which I believe he will take up in detail the question that the gentleman is speaking about.

Mr. Rock: There is one thing here that to me has not been clearly emphasized, although one gentleman touched upon it and that is in this matter of safeguards. I see we are more or less on the firing line. A great many of our plants have a lot of obsolete machinery, which we are not quite ready to scrap, and the question of proper guards, standardized guards on that particular machine is a very difficult thing to dope out. I believe that the thing to do is to secure the sympathy and the help of the operator of the machine. If you go to him in the right spirit and ask his advice as to how to guard this particular machine, not try to argue with him, nine times out of ten he will meet you in a similar spirit, and he will dope out something, some kind of a guard, that will do the trick, and do it absolutely, and that guard he won't want to take off because he had a hand in building it. And that idea will spread all the way through the plant. You will get more co-operation and you will get better guards than if an inspector comes in and orders some type of guard, or in the form of compulsion goes ahead and puts on whatever he thinks will get past the inspector.

Mr. Branstrater: I think the gentleman who has just spoken has touched a very important point. I don't believe there is any man who knows the dangerous parts of a machine as well as the man who is operating it. He is there all the time and he knows all the peculiarities of that machine. I believe that the man who is interested in his machine, in his work, and in his life and limb can do as well putting on an efficient guard as any other man who has anything to do with it.

MR. ELBERTY: I don't agree that the man knows most about his machine. There are no truer words than familiarity breeds contempt. I want to say that had my father known as much about railroad safety as the men on the New York Central lines know to-day, he would have been alive. Had he been properly instructed what were the dangerous parts of an engine, where not to ride while the engine was in motion, he would not have been killed. Now, surely, I think well of my father, and when I say that I say that of all working men. I know the working men of this country. They are my fellows. That is where I live. There is no greater workshop in the world than Pittsburg. All of my relatives and friends have been in those shops, and I want to say they don't know the dangerous parts of the machinery. You educate a man as to the dangers of an occupation and he won't work in that occupation. You educate a child as to the dangers of the railroad and he won't work on the railroad. You educate the boys in the home as to the dangers of the punch press and they won't work on the punch press. I would not work on a punch press for $25 a day. The men don't know the dangers of the machines. We must teach them. And by all means we have got to teach and educate the children in our own homes. How many of you go home and tell your children what to do about the railroad crossing. Why, I have three children and they have to cross a railroad crossing at grade four times a day in going to school. Do they know all about that railroad crossing? I went home a little early the other day and saw my little one, eight years old, standing right in the middle of the track asking about some little study with a girl friend. Familiarity breeds contempt.

MR. GERNON: The next best answer to it is the circular saw. Probably there is no tool so generally guarded with obsolete guards as the circular saw. See what happens. The operator who is thoroughly familiar with it will never use the guard. The circular saw makes the most complete answer to that argument. The operator will not adjust the guard. The man who puts his fingers on the teeth of the saw is bound to get hurt. If you leave it to the operator to guard there will never be anything done. I can agree with the people who provide the guards and the operator who rejects them. It is like the old tradition of the fellow that had the jackass and his load hanging on one side and somebody said, equalize the load, it would be better for the jackass. And he went along awhile after having equalized the load, and he came to the conclusion that that was not the way father did, or grandfather did, and he put it back. We have got to educate the workers. But the circular saw is the most complete answer to the question of whether you can leave it to the operator.

MR. ————: I think one gentleman wandered entirely away from the point. I don't believe the child crossing a railroad track can be compared with an efficient employee. And as to the circular saw, I think the gentleman took the extreme. I don't believe there is a safety man in this audience but who will admit that the circular saw is one of the most difficult problems in the safety field. One of the most difficult machines to keep guarded. It is going to the extreme. I am talking about, for instance, Mr. Jackson's boring mill. Did the man who operated a lathe for many years, I would like to ask, did he get hurt? Did he have any injuries due to working on that lathe?

MR. ELBERTY: Just simply because he was lucky. I held the record in our shop for speedy work, and I don't know why I was never hurt, unless there was some kind providence looking after me. Three times I missed death by less than a foot from stuff falling from a crane.

MR. ————: I would like to tell one instance that bears on the question of whether the workmen appreciate the dangers or not. We had a case where one of our inspectors had made recommendations in certain shops. It was not a very large shop. All those recommendations were accepted with the exception of one which related to the guarding of a shaper. We had a letter from the young man who was in partnership with his father in running that shop, stating that he thought that that was unreasonable, because he said, "Father and I are the only persons who ever use that shaper, and we are both careful men and understand the dangers and know what we are doing." That of course was not sufficient for us and we opened the usual diplomatic negotiations to get what we had asked for in the way of proper protection. While those negotiations were pending we received a letter, which I have, from the son, which contained this passage, "Father has just lost his thumb on the shaper, and we are going to guard it."

COMMISSIONER LYNCH: Don't let us forget the smallest per cent of accidents occurring in the factory are traceable to machinery. There are other causes of accidents for which machinery is not responsible. I have in mind a case where the men were accustomed to rush for the time clock, in order to punch the time clock and get out, and one man collided with another man in making this noonday rush, and the man died, attempting to punch the time clock.

COMMISSIONER WIARD: If there is no further discussion we will adjourn until this afternoon.

TUESDAY AFTERNOON, DECEMBER 12

PRESIDING OFFICER: W. H. H. ROGERS, NEW YORK INDUSTRIAL COMMISSION

COMMISSIONER ROGERS: Mr. Price has had twelve years with the International Harvester Company in the safety work in charge of their safety work and welfare activities; five years with the Industrial Commission of Wisconsin, and is now Field Secretary for the National Safety Council. I take great pleasure in introducing Mr. Price.

SAFETY AND EFFICIENCY

BY C. W. PRICE, FIELD SECRETARY, NATIONAL SAFETY COUNCIL

MR. PRICE: I am to speak thirty minutes, and, as I understand it, I am to spend that time placing before you, gentlemen, not the humanitarian side of the safety movement, but the safety movement from the standpoint of efficiency, from the standpoint of dollars and cents; and, in presenting this — what may sound like the cold side of the safety movement — I don't want to be understood as minimizing the humanitarian side of the movement. But, we have been talking about the humane aspects of this question for a hundred years. It may, possibly be somewhat new and interesting to all of us to consider what this movement has come to mean from the standpoint of efficiency, from the standpoint of profits.

I remember while I was with the Industrial Commission of Wisconsin, one day I went to the Simmons Manufacturing Company, the largest brass bed manufacturing plant in the world. Mr. Simmons, the president, is a young man about fifty, a live, successful, American business man. I had never met Mr. Simmons before, and as we sat there, talking, he turned to me and he said this very significant thing: "Mr. Price, I believe the time is fast approaching when it will no longer be possible to work any of the great revolutionary economies in industry that were brought about with the invention of the steam engine, by the discovery of the application of electricity, and by the discovery of the process of making steel; I believe the next great field in economy in industry is the conservation of the human equipment in our plants." Mr. Simmons has testified to the faith that is within him by making his plant one of the model plants of Wisconsin. For instance, they had a large foundry in which were employed some 550 men, pouring these little castings that join the rods on cheap bedsteads; the roof was very low, gas conditions were very serious; I know many times during the summer they would have half a dozen men prostrated from gas. They spent $43,000, raised the roof of that foundry to some forty-five feet in height, made it a model from the standpoint of light and ventilation, one of the finest foundries I ever saw; they reduced the number of men from 550 to 450, and they so increased the efficiency of that foundry that they saved the $43,000 the first year. I think that is one of the finest examples of the efficiency of good sanitation that I have ever seen.

Now, in my work as Field Secretary I am meeting general managers every day; I suppose I met five hundred general managers in the plants of Wisconsin and spent from a half hour to two hours in their offices; and I want to say to you, gentlemen, that managers everywhere — and most of them are young men of fifty years of age or younger — are waking up to an appreciation of the value of the human equipment in their plants; I hear it every day, it is coming to be a commonplace. Manufacturers are waking up to a realization of the fact that any manufacturer who deliberately pursues a course that disregards the rights of his employees to live their lives, to preserve their limbs and health, to be contented and happy, whether he knows it or not, is pursuing a course that at last leads to loss and inefficiency.

I want to give you the figures that prove that statement and most of them are very recent figures. First, I want to give one figure that came to my attention from the Bureau of Statistics at Washington, which is very significant. This report went on to say that in the United States right now there are thirty-eight million wage earners; and out of that thirty-eight million wage earners every twelve months — every 365 days — there are twenty-five thousand wage earners killed by industrial accidents; that is eighty-three wage earners killed every day; eighty-three killed yesterday, eighty-three will be killed to-day. I tried to picture the thing to myself, Mr. Chairman, the other day and make that twenty-five thousand real to myself. I said, "Let's bury that twenty-five thousand, as they bury those poor soldier boys over in Europe, shoulder to shoulder, allowing about two feet per man, and see what it will come to. I took out my pencil and it figured nine miles and a half — a trench nine miles and a half long, and in the bottom of that trench a solid sidewalk of human bodies every year in the United States as the result of industrial accidents. And this same report went on to say — an entirely new figure to me — that there are seven hundred thousand wage earners that are so seriously injured that they lose over four weeks of time; 2,333 each working day.

But I want to give the bright side of the picture, to show what has been done in reducing accidents, and the economic gain which has come out of the work along safety lines. The first company I want to give you is this; I was at Rochester the other day, and for a long time I have been aware that the Eastman Kodak Company has been doing exceptionally fine work, but they refused to give me any figures as to what reductions they had made in accidents or what savings in money they had made. I met Mr. Robertson, who is to speak here to-morrow, I believe. He took out a sheet of paper from his desk, which was divided up into five sections, showing details of the accidents for five years; that report revealed the fact that during five years the Eastman Kodak Company has reduced its accidents eighty per cent, as compared with its record prior to that time.

Here is another interesting figure that came to my desk three months ago. The Chairman has told you I was connected with the International Harvester Company; and it was my lot to be engaged with that company during the early days of safety work; and I was also employed as a department head in the old McCormick factory, and I know something of the old conditions. The Harvester Company was the second company, I think, in the middle west to take up safety work in a thorough-going manner. Here are the figures they gave me covering the last five years' experience; they have reduced deaths in their twenty-three plants sixty per cent;— and, keep in mind that those twenty-three plants include coal mines, iron mines, railroads, logging camps, all kinds of machine shops and wood-working shops. Included in the International Harvester Company, you have practically every kind of a hazard you have in the State of New York. They have reduced deaths sixty per cent, they have reduced the hours lost per man sixty-one and one-half per cent, and they have cut the actual cost of compensation from fifty-four cents on a hundred dollar pay-roll to twenty-five cents on a hundred dollar pay-roll. If you will look it up, Mr. Chairman, I think you will find that that is about what a clothing store has to pay for liability insurance. So you have that great Harvester Company, with all that hazard in those twenty-three plants, so reducing the cost of compensation that it costs them practically what it costs a clothing store to carry liability insurance. That one figure — twenty-five cents — gentlemen, really indicates what that company has accomplished; and that figure, gentlemen, to me is one of the most significant figures which I have found, because that company more nearly represents the average hazard that you will find in all industries, and, therefore, represents what is possible. If the International Harvester Company can do it, any company can do it.

Here is another figure — the Dodge Manufacturing Company, which company manufactures transmission machinery, that possibly represents an average hazard — just gave us these figures. They have reduced the cost of compensation and medical service, which includes the entire cost of accidents, from fifty cents on a hundred dollars pay-roll to seven cents on a hundred dollars pay-roll. I don't know what the premium would be on a millinery shop, Mr. Chairman, but I imagine it would be more than seven cents. Think of it, a big machine shop and factory reducing the hazard to seven cents on a hundred dollars pay-roll!

As you know, the United States Steel Corporation has 250,000 men working in their mines and steel mills; it is probably the most hazardous industry in this country, and it was the pioneer in safety work. They have done more to teach other manufacturers and they have been more generous in their contribution toward the safety movement than any other corporation; and they are now the leaders in safety work in getting results. They gave me this figure, using 1906 as a basis and comparing the years since 1906 down to the end of 1915 with the record in 1906. They have saved 14,967 human beings, from either being killed or so seriously injured that they lost over thirty-five days of time, as a direct result of their safety work. Now, Mr. Chairman, I picture that to myself in this way; that would mean a city of a hundred thousand human beings — men, women and children — in which city the father of every family, the head of every home, had been saved from either death or serious injury since 1906. Now, do you think, ladies and gentlemen, that the United States Steel Corporation will ever go back to the old days? I want to say to you that safety is put on the map in that company so it won't blot off; safety is recognized in every one of the plants of that company as an indispensable part of the manufacturing organization; and the head of every department is expected to make a record on that just the same as he is expected to make a record on any other thing that makes for efficiency, absolutely.

I want to give you another figure; your Chairman has said I spent five years in Wisconsin; and I am rather proud of Wisconsin, so you will pardon me if I brag for a minute now. But the Wisconsin experience is signficant, because it covers an entire state. If you are familiar with Wisconsin, you know there are large logging interests, large wood-working plants, and many large machine shops like the Allis-Chalmers and International Harvester Company, and steel plants. In the state of Wisconsin in the last five years the manufacturers have reduced the deaths 61 per cent, by actual record from the Industrial Commission's report. And here is a very interesting figure: during the year just before the Industrial Commission came into existence, according to the report of the old Industrial Commission, there were three hundred and sixty-five manufacturers dragged into court and prosecuted for violation of the safety laws. During the first five years there hasn't been a single manufacturer prosecuted in the state of Wisconsin on account of violation of the safety laws. The figures reveal the fact that there has been a spirit of cooperation in Wisconsin among the representatives of labor, representatives of capital, and the Industrial Commission.

Take it in machine accidents alone. The records of the Industrial Commission show that accidents happen at points where something in the way of a mechanical guard could have prevented them. By the installation of mechanical guards the number of accidents was cut in two in five years; that is, there are now one-half as many accidents on mechanical parts in Wisconsin as five years ago; that shows that some guarding has been done. For instance, in Milwaukee, in 1901, there were twenty-two accidents on elevators and six deaths; in 1915 there were two deaths on elevators, one of which was a suicide. This reduction was largely accomplished by the mechanical device.

I presume there are some representatives present of the paper mill industry. I wish to give you one figure from the Kimberly & Clark Company of Wisconsin. This was the first paper mill in the state to get started in safety work, some four years ago; and through their influence every paper mill in Wisconsin is now doing good safety work. A few months ago I visited this company and, as I entered the door of one of their plants, I noticed a piece of paper on the wall and I went up and read it and found this report; that in two of their mills during twelve months up to that time they had had just two accidents and neither of them cost compensation; that is, neither of them caused a disability of over seven days. The treasurer of this company stood up at a meeting of the paper men and said, " Gentlemen, if we had never prevented an accident in our company, the change in the attitude of the officers towards the men, and the change in the attitude of our workmen towards the company, which has resulted from the workmen's safety committees which have been organized in all our plants has more than paid us for every dollar we have invested."

Here is an interesting figure — you will notice I am sticking to my text and giving nothing but figures, Mr. Chairman, and I am going to keep right on until my thirty minutes are up. The Chicago & Northwestern Railroad appointed 600 workmen on their committees and these committees brought in 6,000 suggestions on danger points and from that number all but 200 were considered good by the company and carried out. The Northwestern Railroad during the first three years reduced deaths of their employees 65 per cent; and so remarkable were the results, and so quickly were they realized, that every great railroad in the United States — starting with the experience of the Northwestern Railroad — has organized an accident department and is pushing safety vigorously, and is backing it with millions of money. I just got this report from the Interstate Commerce Commission at Washington before I left Chicago; taking all of the railroads in the United States during the last five years, they have reduced the number of passengers killed in wrecks 50 per cent, just one-half as many passengers killed in wrecks as were killed five years ago, according to the official statement.

They have reduced the number of train operators — brakemen, engineers and conductors — killed, 47 per cent. And here is a still more striking statement: during the year ending June 30, 1916, that is the year just ended, there were 325 railroads — and that includes some of your big systems like the Pennsylvania, New York Central and Northwestern — there were 325 railroads with 162,000 miles of track, and carrying 485,000,000 passengers, that didn't kill a passenger in a wreck. Now, gentlemen, that is the most remarkable thing that has happened in the history of safety; and if there is any doubting Thomas in this audience — if there is any man that doubts the practicability of this safety movement — all he has got to do is to contemplate for a minute the significance of a movement which, within five years, can command the attention of the officers of every great railroad in the United States, and can gain their confidence so that they have backed the movement with millions of money, to appreciate what there is in this safety movement.

A few days ago I was in Omaha; and while there I visited the American Smelting and Refining Company, employing a thousand men, most of them humble Italians. I should say that this smelting plant is a little more hazardous than an ordinary foundry, and a little less hazardous than a steel plant; it is a hazardous plant. They have been doing safety work for this year. As I entered the door through which the men go to check in for work, I noticed a long blackboard, about fifteen feet long and six feet high, which was divided into two sections. On one section was the record, month by month, of the accidents in 1915; on the other was the record month by month for 1916; and this was October 27th, the day I was there. That blackboard record, gentlemen, revealed this remarkable result: they had reduced the actual number of hours lost by those thousand men 90 per cent; I mean they had just one-tenth the amount of time lost during the corresponding months in 1916 as in 1915; and they had reduced the deaths a hundred per cent, and they had reduced the number of accidents 70 per cent. Any accident was tabulated as an accident if it caused a loss of over twenty-four hours of time. And here is a more remarkable statement than all. That was on October 27th; if they ran four days more they would have gone through the month of October without a single man out of the thousand men being sufficiently injured to lose over twenty-four hours' time. I told them to write me if they made the record; I got a letter a few days later saying that they made it. I have never seen anything like the pull-together spirit there was in that plant between the foremen and workmen; the day I was there every foreman had his shoulder to the wheel and it seemed to me that every workman in that plant was vitally interested in making a record for his department. That experience to me was one of the most encouraging and revealing things that I have seen in my eight years of safety work; and, Mr. Chairman, it revealed to me the possibilities there are in this safety movement; when the head of every department puts his shoulder to the wheel in earnest and gets his workers with him.

I thank you.

COMMISSIONER ROGERS: I am sure we are greatly indebted to Mr. Price for his splendid address. It is along a little different lines than most of the addresses we have had so far. Now, this matter is open for questions; any one wishing to talk on the subject will now have an opportunity. I would like to have you take the question up very soon, if there is anything you would like to ask Mr. Price, because his time is limited here. I am sure there are a good many things you would like to ask him and have him explain a little further.

GENERAL DISCUSSION

MR. HATCH, Chief Statistician, State Industrial Commission: I would like to ask with reference to the remarkable results achieved in Wisconsin, a reduction of 61 per cent in the number of accidents, what your impression is as to the condition of things in Wisconsin before the safety movement took hold there. Do you feel that conditions were so bad in Wisconsin that the 61 per cent improvement has not yet put Wisconsin far ahead of other States, or do you feel that Wisconsin has now really gone beyond most of the other States? It is a very difficult matter to get any statistical evidence by which to make comparison between States at the present time, of course. I was just wondering what your impression is on that.

MR. PRICE: In the first place, it is impossible, absolutely, to make any comparison between any States; you couldn't get me to make any statement on that subject. The only way you could make a comparison, is to take, for instance, the shoe factories of New York and compare them with the shoe factories of Wisconsin; or the sawmills; otherwise, you couldn't make any kind of a comparison. But I might say this in regard to the conditions in Wisconsin prior to the Industrial Commission; they certainly weren't good; and there were some very bad conditions. I don't know whether the conditions five years ago were worse or better than in New York, I imagine they were practically the same as in other States. Answering your question in a little different way, let me say this: what has happened in Wisconsin is only in line with what is happening in all these companies of which I have spoken, and only indicates what is possible in any company.

MR. HATCH: That is precisely what I had in mind, and not the idea of any invidious comparison. We have every reason to believe, in other words, that what has been done in Wisconsin can be done everywhere.

MR. PRICE: Any safety engineer will tell you there is nothing remarkable or mysterious about what has been done in Wisconsin; because what has been done there has been done in hundreds of plants; and some of the finest things I ever have seen done have been done in plants in New York.

MR. F. P. THOMPSON, St. Regis Paper Company: I would like to ask you if the Kimberly & Clark people have foreign employees.

MR. PRICE: A great many.

MR. THOMPSON: Do they ever appoint them on safety committees?

MR. PRICE: They do.

MR. THOMPSON: When forming a committee do they have all foreigners or have some one to direct them?

MR. PRICE: Among the five would be possibly one humble man, say, a common laborer; mix them in; I think it is a very good plan. It would be advisable to appoint one or two humble men on a committee of five.

MR. A. E. DAVIDSON, Chesebro-Whitman Company: I would like to ask Mr. Price whether he thinks the safety first idea can be organized in construction work? That is, the erection work of our cities.

MR. PRICE: Very glad to have that question asked. Some two years and a half ago the Commission employed Mr. Sidney Williams, who had had five years' experience in contracting work. He is a very practical man. He has been working with architects and various men interested in construction work for two years and a half, and has worked out standards on construction work, on old as well as new buildings. He is now promoting safety in construction work just as it is being promoted in factories, with bulletins for bulletin boards. I want to say that the experience up there thus far demonstrates that construction work offers just as good an opportunity to do efficient educational safety work as the factories do, and they are getting results. Standards on construction have been worked out by practical men just the same as the other standards of the State.

MR. SANFORD, Conference Board on Safety and Sanitation: A mention has been made in regard to the workmen's committee. It seems to me it is the duty of the foreman or superintendent to look to the welfare of his men within reason and to get out his product; and in that case wouldn't it be just as efficient — we are talking about efficiency this afternoon — to have that work done by a safety engineer inspector, or both, if the plant is large enough,— rather than having committees out of the workmen. In that connection I would like to know if there is a plant, say, east of Buffalo — between Buffalo and Boston — where there is a good, live workmen's committee; I, personally don't know of one, and I would like to know of one.

MR. PRICE: Answering that first question, I will say this: That we have learned in eight years that the way to get a workman interested in the safety work is to give him something to do. The way to get a man interested in a political party, or lodge, or school, or a church, is to give him something to do; Mr. Chairman, that is fundamental in human nature; and I consider that the unique thing in the American Safety Movement — is its democratic character — is the fact that we have gone down among the workmen, given them some responsibilities — some recognition — and an active part in safety work, and have secured their interest, their real co-operation, in that way, to a degree which we have never been able to secure by discipline.

Let me tell you what happens when you turn men loose in a factory — and I have seen it happen in hundreds of plants; in the first place, when a workman goes into a department for the first time to make an inspection, he begins to look for points of danger and he discovers what a large percentage of accidents happen through the carelessness, thoughtlessness, of workmen. You can't convince workmen of this by simply telling them, but if they go out in the plant, and week by week find out by themselves how accidents are happening to the men, they learn for themselves and are convinced; and that is one of the most valuable and one of the most wholesome things we can get into the minds of our workmen. And the second thing is this: that when they get this information, and when they acquire this new interest which comes from being given responsibility, I find that they become the best boosters for safety and will do more to convince your workmen as to what the company is trying to do, than your foremen can do; I consider the workmen's committee the most valuable means in a plant of really getting your workmen with you.

MR. MORGAN: In a plant of 4,000 men and women we have four workmen's committees, that in two months have handed in over 2,000 suggestions. Now, if that isn't a live committee, I don't know what one is. These suggestions at first — carrying out what Mr. Price said — all tended towards mechanical safeguards; so the safety department got hold of the committee and showed them that the accidents were not due to lack of mechanical safeguarding, but to the unsafe practices of the men; and pretty soon they began to get after John Smith and Jim Jones for not wearing goggles, and things of that sort. This is in answer to the gentlemen's question back there about live committees. Furthermore, we change the membership of these committees regularly.

MR. ELBERTY: I can give you a number of plants where they have these committees, such as the Bausch-Lomb Company of Rochester, Eastman Kodak Company, Rochester, Remington Typewriter Company, Ilion, Halcomb Steel Company, Syracuse; if I had a few minutes I could give you five or six hundred that have good workmen's committees in New York State.

MR. BURKE: I think, Mr. Chairman, we are very fortunate in having with us this afternoon Mr. Price. I have had the pleasure of meeting Mr. Price over our way quite recently and we think a great deal of him. The Commission is greatly indebted to him for his speech this afternoon. I don't know whether it is on the part of brevity by Mr. Price, at this time, but I recall that he gave us six points which he advanced as reasons which were very effective in organizing a shop committee. Now, if he could place those before you I would be very glad to have him do so.

MR. PRICE: I shall be very glad to. I kept within my thirty minutes, Mr. Chairman.

The six points that our friend has spoken of are not original with myself, but represent the experience of all of us men who have been interested in safety. In organizing Safety Committees, here are the six points that I think are absolutely essential: In the first place, it is well to select in the ordinary department about three men, rank and file workmen; do not mix foremen with workmen, or the tail will wag the dog if you do, and the workmen will feel that it is not their committee, it is the foreman's committee, and they tag along. Select three of your most intelligent, best-known, most respected men; let one serve for one month, one for two months and one for three; and thereafter they will serve for three months; so you will give a lot of men an opportunity to serve on the committee and get the experience.

Second, it is important that when those men are appointed, your foreman or your superintendent — preferably the foreman — carefully instruct them; talk to them in such a way that he convinces them that the company really means business in asking them to go out into the department and make an inspection; that the company really means that they shall have perfect liberty to go out and find any point of danger possible, the more the better, and to make suggestions in regard to all points of danger. Now, if they are properly instructed, they will feel that it isn't a joke, but serious business, and they will take their work seriously and you will get results. It is very important that the foreman keep in touch with those committees and encourage them from week to week, make them believe that they are doing something valuable to the company, and that the company appreciates what they are doing; occasionally bring before them reports of accidents from other plants or anything that will enlarge their view of the safety work and make them appreciate their job and what they can do.

The next thing that is very important is this: they should make their inspection say, once a week or once a month, and the company should give them time off, say an hour or two hours, to make the inspection and to make their reports. The report of a committee should always be made in writing; it goes without saying, that if a committee finds points of danger which they think ought to be reported immediately, they will report to their foreman verbally; but on the day when they make their inspection, all of those points should be recorded, then they will be a matter of record for reference and no one will forget the points recommended.

Another point is this: that if you find some of the suggestions of the workmen are not practical, take it up with them very carefully and explain to them why they cannot be carried out, so there won't be any suspicion on their part that the company isn't playing fair. And, further, I want to say to some of you who may be "Doubting Thomases" about workmen's committees, that my investigation of many plants where they have organized workmen's committees successfully, has revealed the fact that from 90 to 95 per cent of the suggestions of the workmen's committees are found practicable and are carried out by the company. Now, some of you men who may have had experience with suggestions on production may think that they will make a lot of fool suggestions; well, you are mistaken; it is surprising how much the men know about danger in plants. In the Illinois steel plant, where they sometimes put the humblest workers on the committees with other intelligent men, they have received suggestions on some certain points which their more intelligent men had overlooked. I think it is very important, if you have a safety man, that he should get in touch with the safety committees and keep in touch with them; not to control them in any way, but to make every effort to make the committee feel that they have perfect liberty to go anywhere in the plant and make as many suggestions as possible in order to make the plant safe. When I think of workmen's committees I always think of one story which illustrates what a workmen's committee can do in the way of detecting points of danger. I went to the Neenah plant of the Kimberly & Clark Company; I saw the superintendent, Mr. Jackson, who was very enthusiastic about the work of the safety committees in his plant. He says, "Price, do you know, the first hour we turned that committee loose they came back at the end of the hour with twenty-eight suggestions, and every one of those twenty-eight suggestions covered a serious point of danger." He said, "I want to show you one of the points." He took me downstairs; it was an old plant and built over the river; I noticed the floor was all wet and slimy; over on one side I saw a great big beam about three feet from the floor; and to the floor was a three-inch shaft running with a thirty-inch pulley all unguarded. That committee found, Mr. Chairman, that the oiler, for nobody knows how long — forty years, say — had gone down in that basement, on that slimy floor, had crawled on his belly underneath that beam and over that shaft, had crawled in behind and oiled a machine and then crawled back. As one of the committee said, "If he had been decent he would have been killed."

R. C. Richards of the Northwestern Railroad says that ninety per cent of all results secured on their railroad are due to the unflagging zeal of the men of the workmen's committees.

Mr. Thompson, Eastman Kodak Company: Mr. Chairman, I want simply to back up what Mr. Price has said regarding workmen's committees, by giving you my own experience in the plant with which I am connected. We employ in this plant about twenty-three hundred people; it is a six-story plant and a basement. We have one general committee selected from the foremen, consisting of three, which makes an inspection of the whole plant weekly; and then each floor has a workmen's committee consisting of three; so that they make an inspection every week, and we receive those reports weekly from these different committees. Now, the suggestions on those reports average about ten per week; roughly, it is eighty suggestions coming in every week on those reports. Now that is a total of 4,160 suggestions in a year. Now, at the end of last year out of that 4,160 suggestions we only turned down eighty-six; the remaining 4,074 were adopted and put into effect. I thought I would just like to state that as backing up Mr. Price's statement.

Mr. Price: If you want to see the real thing, go to Rochester and see the Kodak Company's plant; I have been there just recently.

Mr. H. G. Meacham, Construction Engineer, Gould's Manufacturing Company: I would like to ask Mr. Price his opinion of the practice of having the safety engineer meet with the workmen's and foremen's committees?

Mr. Price: I think it is a very valuable thing, if the safety engineer doesn't try to control the committees; if he meets them in a perfectly friendly way, and makes them feel that he is simply there to advise with them but not to interfere at all with them, and his attitude is wholly one of encouragement and cooperation —don't let the tail wag the dog — it is a good thing. It depends wholly upon the attitude of the safety engineer.

Mr. Shafer, Standard Oil Company: Mr. Chairman, it might be of interest to know how our concern handles the safety problem. Prior to the adoption of the Workmen's Compensation Law, the company, through its various superintendents, did everything it could, or that came within its knowledge, to benefit and protect the workmen. In case of an accident, even though the accident was entirely the fault of the operator, the man's doctor's bills were paid, the man himself was paid for the entire length of time he was absent. Since the workmen's compensation went into effect we comply, of course, with the rules of payment; but in addition thereto, if we find the accident was not the fault of the man, we still continue to pay the man his full wages while the compensation calls for only two-thirds payment. We also pay him the first two weeks in full, while the Compensation Law requires no payment for the first two weeks. At the inauguration of the workmen's compensation act, each superintendent went still further into the matter of providing safeguards in and about our various plants. I know in my own particular plant, where we have a great many punch presses, we adopted a great many additional safeguards; and I am happy to report that they have been productive of a great deal of good, and have increased the efficiency of the plant by reason of the fact that the operator is no longer afraid that his fingers will in any way be mutilated. To carry the matter along still further, the company decided that it would be better, rather than having each superintendent provide for the safety of the plant immediately under his direction, that a general committee be appointed to have charge of safety matters in all the plants. Under that ruling a member of our manufacturing committee and a representative of each of the interests in the company — that would be the gas-lighting, the refining interests, the general welfare, of the plant; a man from each one of those departments was taken in the committee, making a total of twelve. We make periodical visits to each one of the plants, and we have found that there have been a great many valuable suggestions resulting from that committee; because a superintendent, or a man in charge of a plant, becomes so accustomed to the conditions prevailing in his plant that there are many things that escape his attention; whereas, a new thought, or new eyes, come into the plant, pick out these defects and call them to attention; and we know that when these suggestions are made that they have not only the co-operation of the superintendent of the plant, but we also know that they are things that the officials of our company, from the president down, want to have put into effect; that everything must be done, and everything shall be done, to provide for the protection of our employees.

In addition to this general committee, we have in each one of our plants a committee composed largely of the foremen. They visit all parts of the plant and make recommendations to their superintendent. I may say that the recommendations made by the general committee are usually reported to these workmen's committees so they can see exactly what the larger number, or the general board, thinks of safety matters, and the general appearance of the particular plant. In that way, by the foremen's committee and the workmen's committee working in harmony we feel we have things pretty well covered. We also feel that if the laws were such — by laws I mean the laws of the insurance companies and of the State — if they were made a little more uniform it would help our situation. I understand, from statements made by some of the speakers, that there is a movement now on foot to co-operate; that is, have the interests co-operate so as to get a uniform law on all matters. We don't feel that we want any more laws, but we do feel we would like to have a little more uniformity in laws existing. We to-day feel that the best good to workmen is to come by having them feel that the high officials in the company in the superintendence of the plant are in sympathy with the safety movement. Then to get our foremen into co-operation with the superintendents of the plant, and in that way we are gaining more and better records for the safety movement, and from them radiate the safety movement to the men. I have found from my own experience that I can put on any number of safeguards in a plant or on a machine and the operator many times will not see the utility or the need for it; but when I show them the danger to themselves of carrying out foolish ideas, or how they will be detrimental to them,— if I will go and explain to them, point out to them where they are wrong, where they are putting themselves into danger or some of their fellow workmen into danger, I feel in that way we get better results than by a general rule or general notice saying that if a man is careless he shall be discharged. There are many times a man is careless, and the only way it can be forced back to him is to make an example of some particular man.

MR. PRICE: I just want to thank you. My time is up.

COMMISSIONER ROGERS: Mr. Price has come a long way to deliver this address; I would like to entertain a motion of thanks to him for this splendid address.

(A motion was made and seconded that a rising vote of thanks be given Mr. Price, which was done.)

MR. JAMES P. HOLLAND, President State Federation of Labor: I would like to ask the Standard Oil man what has been done with the cisterns and stills, to protect men who work in the open air, in Indiana, Bayonne, Hunter's Point and Long Island City.

MR. SHAFER: I can't answer your question regarding Bayonne, Hunter's Point and Indiana, but at Long Island City there is a corrugated shed and has been for many years; I might add that that shed has recently been repaired, so it shows there is no disposition on the part of the company to take it down.

MR. HOLLAND: Then for God's sake, tell them to do the same thing with Bayonne and Indiana.

MR. SHAFER: I think the gentleman is somewhat out of order, because this is a convention dealing with the Standard Oil Company in New York State and only in New York State. The company in New Jersey is under New Jersey laws; the same can be said of Indiana, and cannot be referred to the Standard Oil Company of New York.

COMMISSIONER ROGERS: Before taking up the next paper on this program, I wish to diverge a little from the program and ask your indulgence for a few moments.

I assume that this Congress will meet annually during the next number of years, and I want to present an invitation which we have received to visit a city west of here, Rochester, N. Y.:

ROCHESTER, N. Y., *December* 9, 1916.

HON. JOHN MITCHELL,
Chairman, State Industrial Commission,
230 *Fifth Avenue, New York City, N. Y.:*

My Dear Mr. Mitchell.— On behalf of the citizens of Rochester, I take pleasure in extending to the New York State Industrial Safety Congress a most sincere and cordial invitation to hold its 1917 Congress in this city.

Our Convention Hall seating 4,000 people, and so arranged it can take excellent care of a smaller audience, is at your disposal, free of cost. Our several new hotels, together with our other first-class hostelries, offer you service and accommodations equal to those of any city in the country, and, what is more to the point, the rates are low.

Let us demonstrate to you personally why the Rochester spirit is well known all over the country. Come to Rochester next time, and let your Congress be a vacation as well.

Cordially yours,
HIRAM H. EDGERTON, *Mayor.*

I have another invitation addressed to Honorable John Mitchell, on behalf of the Rochester Chamber of Commerce.

Now, Ladies and Gentlemen, it gives me pleasure to endorse the letters of the Rochester Mayor and the Rochester Chamber of Commerce inviting the New York State Industrial Safety Congress to meet in that city next year. An acceptance, it would seem to me, would be particularly appropriate, because of the activities that city has shown in lines of industry. In fact, the report herewith demonstrates the efficiency and accomplishment which is entitled to recognition, and I believe it ought to be done.

The Rochester Chamber of Commerce has done pioneer work in the interests we are called upon here to-day to talk over. You have heard by our speaker, Mr. Price, that one concern in Rochester has made a saving of 80 per cent in injuries to employees in the last few years. I don't believe there is another firm in the State of New York that employs as large a number of men that can make an equally good showing.

Gentlemen, I hope that if this Congress continues for another year, you will see fit to favor Rochester with your presence.

The next on the program is What Statistics Should Be Reported Under Compulsion, by Leonard W. Hatch, Chief Statistican, New York State Industrial Commission.

WHAT ACCIDENT STATISTICS SHOULD BE REPORTED UNDER COMPULSION.

BY L. W. HATCH, PH. D., CHIEF STATISTICIAN, STATE INDUSTRIAL COMMISSION

The guide to the answer to this question is to be found by determining what statistics are necessary for intelligent prevention work, just compensation under the law, and correct cost of compensation insurance. These ends, based on both humanitarian and financial considerations are of great moment to employer, employee, and the public in general. Certainly no one would have the temerity to argue, in the face of the present-day compensation and safety movement, the latter of which is here vividly exemplified for the Empire State by this Congress, that anything less should be required than what is necessary for the most effective efforts in this movement, or that any part thereof should be left to the uncertainties of voluntary furnishing of information. What is necessary for the purpose, is of too much importance to the lives — and pockets, of too many people, to be treated as less than a public duty, to the performance of which compulsion by public authority must be applied where intelligence and common sense do not inspire willing performance.

In considering what statistics are necessary, it may illuminate the whole matter to note at the outset that here we are in a field where for the most part statistics are the only guide to intelligent action. The fundamental characteristic of an individual "accident" is that it is unforeseen, or that it happens unexpectedly. This, however, is not because an accident, any more than any other occurrence in this world, happens without a cause, but because there is so great a variation from place to place and from moment to moment in any one place, in the circumstances which give rise to accidents, that where individual cases only are considered, we seem to be dealing with nothing but blind chance as to their incidence, causes and results. But the unforeseen or the unexpected in life is so simply because it is what has not been experienced before by the particular person who is the observer. As soon as the unforeseen is repeated in his own experience, or in the experience of others under his observation, the element of unexpectedness gives way before knowledge born of experience that such things do happen, and when the experience is long enough, or broad enough, this knowledge extends not only to the fact of recurrence but also to more and more of detail as to frequency, causes and results of such happenings. Translated into simpler terms, an employer, new in business and without knowledge of the subject, who sees for the first time an accident in his plant, may very normally say — " It was purely accidental; lightning never strikes twice in the same place " and so dismiss the matter. But if that accident happens again in his plant, and still more, if it is further repeated, dismissal of the subject on the strength of the lightning adage will brand him as a fool who cannot or will not see what, although at first indeed unforeseeable, experience should now have taught him to look out for.

Note now that this experience, which will eliminate or reduce the element of the unforseen in accidents and enable us to anticipate as to the future, means simply numbers of accidents brought together, instead of individual isolated cases considered separately, and that the larger the experience, that is the larger the number of accidents observed, the greater the light that is afforded for future guidance. Here then we are brought face to face with the necessity of bringing together large numbers of individual cases if we are to discover the lessons of experience. That is precisely the function of statistics, so that only by statistical studies may we learn from the past that which we must have for future guidance in this matter.

Perhaps this sounds very academic. But so far from this being an academic matter, it is absolutely the most practical thing in the world. In fact, I am not telling you something which ought to be. I am only telling you in general terms what is practice to-day. We have two great things to do about accidents, prevent them or compensate the injured. But how do we go about this prevention business? Is a guard put on a machine because someone guesses an accident may happen at that point? Not if we are intelligent about it. That guard goes on because sometime or somewhere experience has shown that accidents do happen in such places. And how do we go about insuring the payment of compensation? By charging an employer for insurance what someone with no knowledge of accident experience guesses accidents in his industry may cost? On the contrary, compensation insurance rates are based purely and simply on the results of statistical studies of past experience.

There is one more point to emphasize in order to complete this analysis of the indispensable role of statistics in this field. All the work of accident prevention and accident compensation must deal with the individual employer. He it is who, be his inspiration thereto what it may, must do the work of prevention, and he it is who pays (in the first instance at least) the insurance premium out of which comes compensation. The individual employer is the active, practical agent in the whole matter. But here is a matter in which the individual employer cannot act with full knowledge on the basis of his individual experience alone. This is because, as a rule, his experience is not large enough to indicate what the liability to accidents in his plant is, that is, where it is, what it is, and how large it is. Except in a comparatively few of the very largest plants, accidents of a given kind recur at such long intervals or so irregularly that one year's experience reveals, for example, only a very few points where accidents are liable to happen, whereas what he must know in order to forestall accidents is all the points of liability. There is only one way to give him this latter, that is by giving him the benefit of the combined experience of all plants like his, and that is precisely what statistics of accidents can do for him. To illustrate, inspectors are constantly met, when insisting on the safeguarding of some danger point, with the objection "We never had an accident there" — in saying which the employer though truthfully quoting his own experience, is actually being blinded by that experience because taken alone. What he needs to enlighten him is the experience of others combined with his own, in other words, paradoxical as it may sound, he needs some statistics to wake him up. A fairly tragic illustration of what I am trying to emphasize came to my attention some years ago. An inspector observing in a shop a projecting set screw on a shaft some distance above the floor, told the foreman that it must be covered as required by law. The reply was — "That's all foolishness, I've worked here a dozen years and nobody ever got hurt up there." And so in spite of the fact that the inspector insisted that an order to guard the place must be issued, the foreman let it go. When the inspector returned a short time afterward to see if the order issued from the Department had been complied with, he found that the foreman had been cruelly misled by the blind guide of his own experience. Shaft trouble had led him to mount a ladder at that point, only to have his sleeve caught by that very set screw and to have his arm torn off at the shoulder. What did that foreman need to have prevented that accident? Unless he was utterly beyond the reach of reason, he needed to see that somewhere set screws were killing and crippling men every year. In other words, statistics of set screw accidents would have corrected the erroneous impression born of his own too narrow experience.

Such fundamentally is the reason why the State should insist on the furnishing of accident reports and should make statistical studies of them, namely, so that the individual employer's efforts for safety shall be guided by the fullest knowledge of that overhanging liability to accident which is only revealed by combination of wide experience, and so that in the process of spreading the cost of compensation over all those who are under the liability (which is the function of insurance) the burden shall be allotted according to actual liability. Only the State is in a position to secure the fullest knowledge here and make it free to all as it should be.

But let us not pursue this elementary point further. We can no longer be content to "muddle along" in this matter of prevention and compensation. We *must* have all the light that experience can give to guide us, and to neglect statistics of accidents is in large measure to go it blind. Let us go on then to the very practical question which the subject assigned for this paper requires us to consider — What statistics of accidents shall be reported under compulsion?

So far as concerns any question as to whether some information about accidents should be required, and some left to be furnished voluntarily, which may be implied from the wording of the subject, there can be only one correct position in the light of what has been said above. All that will afford information of practical value in the work of prevention or compensation must be required. Prevention of accidents or just compensation for those not prevented, are now recognized to be matters of too great public concern, touching lives and property interests of too many of its citizens, to justify anything less than the making of an obligatory public duty of everything that is necessary for most intelligent efforts toward those ends.

Our question then is reduced to this — What statistics shall we have? It would be impossible here to go over in detail the various points on which accident statistics can and should enlighten us, and what reports must be made in order to secure those statistics. The time available would not suffice to more than begin any such review. But let me put in evidence certain facts which will show you that what the Industrial Commission in New York is undertaking to do in this field is not in least degree of the nature of perfunctory or blind proceeding because the law directs something of the kind, but has been carefully planned after extended and most careful study by many persons most competent to advise in the matter.

Probably it will surprise many to hear the statement that, at the present time, probably no part of the technical problems connected with accident prevention and compensation have been threshed out so nearly to the point of genuine authoritative standardization as have the statistical problems. That, however, is the fact. What has made this possible is the fact that these problems are purely scientific and technical, are not complicated by considerations of policy, and are essentially the same everywhere. What has actually brought it about, is much hard work in conferences and committees by a large number of those handling these problems extending over a number of years. The technique of statistics is about the last thing to attract any public attention and this movement has gone forward very quietly. But none the less important has been the work accomplished.

There is not time here to review this work at length. A statement sufficient to indicate results attained and the weight of authority and work back of them will serve the present purpose. As early as 1911, five years ago, this movement for standardization of accident statistics was started. During the five years since then there have been enlisted in it practically all of the public and private organizations, governmental, civic and scientific, especially concerned with such work. These have taken part not only by counsel and advice but actively and to the extent of special study of the matter by special committees. The list of committees includes the following:

Representing Government Officials: The Committee on Statistics and Insurance Cost of the International Association of Industrial Accident Boards and Commissions, and a special committee on mine accident statistics appointed by the Federal Bureau of Mines; *Representing Civic and Scientific Societies:* the Committee on Standard Schedules and Tabulation of the American Association for Labor Legislation and Committee on Compensation Statistics of the Casualty Actuarial and Statistical Society of America; *Representing Employers and Insurance Companies:* The Accident Statistics Committee of the National Safety Council, and the Committee on Statistics of the Workmen's Compensation Service Bureau.

In addition to the work of these committees separately there has been much co-operation between them, partly as a result of membership of several individuals in two or more of them, and partly by joint participation in conferences. These committees have also enlisted the co-operation in conferences and by correspondence of many individuals outside their membership.

This work of standardization has now arrived at the point where very general agreement has been reached on main features, including a standard definition of what accidents should be reported, a standard form for reports, standard classification of industries, causes of accidents, location and kind of injury, and extent of disability, and standard table forms for the principal tabulations.

What now is the significance of all this for accident statistics in New York State? Just this. The Bureau of Statistics of the State Industrial Commission has taken an active part throughout in this movement for standardization, being represented on all but one of the committees above referred to, and is basing its own work on the standards which have thus been worked out. These standards, let me emphasize right here, have been formulated with constant regard to the practical utility of the statistics recommended. Only to arrive at the best scientific methods to reach what is essential for guidance in accident prevention and compensation has been aimed at. The Industrial Commission in New York, therefore, in this matter of accident reporting and accident statistics is proceeding according to a program which has been most carefully studied and thoroughly worked out in every detail. It can be guaranteed without reservation that, if carried through, that program will put at the disposal of employers in this State, the best of material for their assistance in this field.

But lest it may seem that you are asked to accept too much on faith as to the value and practicality of what is planned, let me give you an illustration of the kind of assistance the plans we are now working with will furnish relative to safeguarding machinery for example. Of the various classes of machinery it is known that hoisting apparatus is an important one with reference to accidents. Heretofore accident statistics in this State have been able to show (outside of a little further information for fatal cases) only the number of accidents on each kind of hoisting apparatus, as elevators, cranes, etc. But the compilations now under way will show not only such figures separated for a larger number of kinds of apparatus, but on what part and how the accident occurred in connection with each. Thus for elevators there are nearly a score of divisions to bring out the number of accidents connected with cables, counterweights, machinery, cars, fall of person, or falling objects, and these are further sub-divided as to how the accident happened, in the case of cables, for example, whether due to breaking of, unwinding of, or being caught in cables. Or take the large cause class of working machines. Heretofore, we have had figures only for total cases on principal classes of machines in the main industries. But the new classifications are designed to bring out not only distribution by each specific kind of machine under the classes formerly used, but for each machine distribution as to parts of the machine (point of operation, belts or pulleys, cranks or eccentrics, fly wheels, gears, set screws, etc.) and as to manner of occurrence whether in adjusting machine or work, starting or stopping machine, operating, breaking of machine, cleaning or oiling, repairing, flying objects from machine, centrifugal explosion, loose clothing of worker, or non-use of guard which had been provided. That is the kind of close location of hazard which it is proposed to make available as a guide to the safety inspector and the employer. In similar detail the other features of accidents — part of person injured, nature of injury, results as to time loss and compensation cost, and distribution by industries — are to be analyzed, so that instead of proceeding only with knowledge of certain general features and largely by inference and guess work as to details, we shall proceed with the full knowledge requisite for most effective handling of the practical problems connected with accidents.

So far I have endeavored to make clear that back of what is now being required in the reporting of information about accidents in this State is a carefully worked out plan, which requires only to be carried through, to afford help of the greatest value to all concerned with accident problems. But again not to ask you to accept too much on the strength of general considerations, let us take up one specific detail as to reporting of accidents, about which there is perhaps most likely to be doubt as to the necessity of what is required. This is the reporting of non-compensated accidents. What are the reasons for reporting such cases? Perhaps we shall see the matter most clearly if we start from two propositions, first, that all classes of accidents that ought to be prevented, or that are or may be the occasion of compensation payments must be included in our statistics, and second, that what is most likely to secure completeness and uniformity in the reporting of such classes must also be considered. Those two principles may be taken for granted. A little examination will, I think, make it clear that what is required in New York as to less serious accidents comes within those rules. The requirement here is that "every accident which causes loss of time of more than the balance of the day, turn or shift on which the accident occurred, or which requires any medical attendance other than first aid treatment" shall be reported. In passing it may be noted that that rule is exactly the standard as to reporting which has been agreed upon by the conferences above referred to.

The definition applies two tests as to what cases shall be reported, first, time loss and second, medical attendance. The cases coming under the former test would in large part come under the second also as an injury causing the time loss specified would commonly require some medical attention. The elements both of wage loss to the employee and medical cost to the employer stamp this class of cases as one that must be included in prevention efforts, and one to be reckoned with as to compensation insurance. A rough estimate indicates that quite likely ten per cent of the wage loss of employees in this State on account of all accidents is due to these cases where the time loss is not over two weeks, and the total cost of medical aid which the employer must pay in these cases is probably equal to half of such cost for compensated cases. Another more general consideration here which may be mentioned is the important light which can be thrown on the question of reducing the waiting period in the New York law by statistics on these, at present, non-compensated accidents.

Turning now to those minor accidents not reportable because of time loss but required to be reported because they involve medical attention, the simple fact that they involve medical expense which the Compensation Law requires shall be borne by the employer makes their inclusion necessary in order to secure complete statistics of experience under that law. Furthermore, these accidents are of significance in other directions. Thus they are important for the study of causes. One measure of an accident cause is the frequency of accidents due to it. Relative frequency of accidents due to different causes is most quickly to be discovered by study of all accidents rather than only the more serious ones. The costliest accidents from the point of view of compensation are permanent total disability cases, yet there are so few such cases in a year that taken by themselves they are almost useless for any detailed study of causes. The warning to prevent accidents at a given point may not be given by a serious accident there for months or years, whereas the constant recurrence of many minor accidents would be serving notice daily of that danger point. When a machine is producing many cut fingers, it is not necessary to wait until the lesson is made emphatic by several fingers or hands, to learn that it is dangerous.

Another consideration which increases the significance of these minor accidents is the fact that an injury at the moment of accident altogether trivial may be reason of infection develop serious, or even fatal, results. Both the light they throw on accident frequency and their potential seriousness in themselves, justify insistence that in the study of accident problems these minor cases shall be recorded and reported.

As a matter of fact the logic of all that has just been said, followed out consistently, would argue that every known accident should be reported, which would mean the reporting of a great many more than is now actually required by the standard definition quoted above. From the point of view of the State, however, practical considerations in view of the amount of work involved in handling or tabulating these cases which do not entitle to compensation or benefits under the law have led to the drawing of the line considerably inside of such a mark. But from the point of view of the individual employer, there is stronger reason for following the matter through and the conferences on standard accident statistics have recommended that employers should record all accidents.

In addition to considerations from the point of view of statistics, such as have just been pointed out, there are other considerations from the point of view of compensation administration, and of securing uniform practice and complete reporting by employers, which have also been considered in establishing the standard reporting rule. There is not time to go into these here other than to note that the definition with reference to time loss was based on what seemed to be the clearest and most workable rule as tested by actual practice, having been originally worked out in the safety department of the U. S. Steel Corporation.

It has been observed, perhaps, that this paper has been answering the question —"What statistics should be reported," with the reply —"Those statistics which in accordance with the law are now required," and that is, in fact, the answer. But the writer will certainly feel that he has fallen short of his hope, if this paper shall not have served to impress the employers in this Congress with the idea that what is being required in this matter has the soundest kind of reason in it from the point of view of their interest as well as that of the State. Let me remind you again that the employer is the central party in interest, either on his own account or because he must be the active agent, in connection with accident problems. If accidents are to be prevented in his establishment he must make it safe and no one is more concerned than he that compensation insurance rates which he pays shall be just. Who else, therefore, can have greater interest than he that there shall be available adequate statistical information to make efforts toward those ends most effective? His own interest correctly viewed, as well as his sense of public duty, should put him in the position of *insisting* that accidents shall be reported as the Industrial Commission requires, so that the statistical service which the Commission aims to give him may be fully realized.

COMMISSIONER ROGERS: This paper is now open for discussion.

GENERAL DISCUSSION

MR. T. J. CAHILL, President, Bricklayers Union No. 34, Brooklyn: I would like to ask the gentleman if there are any statistics regarding accidents due to falling objects on outside scaffolds which are uncovered? I want to state at this time that there is a very great hazard in the building industry and it should be so regarded, but very little attention is paid to it. It is part of our laws, it is also an agreement between the mason builders and carpenters, that all men employed on these outside scaffolds must be covered when working below other men. We all know that in the city of New York we have buildings of forty-five and fifty stories, which are high places for men to work. Men working on a scaffold elevated ten stories or fifteen or twenty, with mechanics working over their heads fifteen or sixteen stories. A scaffold is put up overhead a few stories, and they call that overhead protection. We don't call that adequate protection. We would be glad to organize safety committees or co-operate with safety boards if we thought any good could accrue to our members. We know — I know — arguments were presented this morning that the workmen are at fault, and the trouble is to get those workmen to comply with the safety regulations laid down by the employer. The shoe is on the other foot from my side. We know what we want, but the trouble is to get the contractors to give us that overhead protection. If we were the contractors we could discharge those men; but we are not in position to discharge the contractor. Now, we place this before you gentlemen here to see if we cannot interest you in helping us to get better outside scaffolds and better outside protection. I would like to ask if there are any statistics regarding scaffold accidents by falling objects?

MR. HATCH: Yes, there are some very interesting statistics as to accidents in the building industry. We have not in the past distinguished accident causes in connection with scaffolds due to falling material from above the scaffold. I am very much interested in what you say as to the frequency of such accidents. We are trying to revise our classifications to get back to every kind of accident which is happening, and then find out how many there are of that particular kind. But as to accidents in the building industry we have found out some very important things since the reporting of such accidents was required by the State of New York. Accidents in the building industry haven't been recorded in this State for more than three or four years. The first reporting of accidents in the building industry was required in 1911; they were reported in factories for a long time before that. Now, we have found out that beyond question there are more men killed in the building industry in the State of New York annually than are killed in all the factories of the State put together; and probably not more than one-quarter as many people are employed in the building industry as are employed in the factories of the State. The Industrial Commission has not been asleep on that subject. We now have this subject under consideration and a bulletin considering it is now in preparation. And if I may voice my individual hope, it is that out of the reporting of accidents in the building industry in the last three or four years in New York, we shall get some change in the law, or more adequate provision for enforcement of the law. We have had laws regulating planking of floors, and so forth, but the great difficulty of that law has been that the law has left those provisions — practically to be enforced only on complaint, or else the Legislature has failed to provide the amount of inspection service that is necessary in order to get at those points. I hope that out of our statistics this one practical result may come.

MR. ESTABROOK: I would like to ask if there are any reports of falling through open elevator shafts in the construction of buildings. My local has a little over three hundred membership, and we lose one of our members through that cause every year. It seems that through some carelessness these long shafts — these openings for elevator shafts — are left open, and, of course, they are not covered, because they are used as means for hoisting material to the upper floors. I have known of other cases where a man will stick his head out and call to a man above his head, and in one case it came down and crushed him to the bottom of the pit. It seems to me there is nothing on these programs relating to the building industry; I think it is one of the most important parts of the dangers — or to the safety appropriations to be adopted in the future for the building interest. And, also, I had on my mind this same question asked by the brother, the secretary, of the bricks falling on people below. On one job in New York City a plumber working on a job where I am at present came back and said he didn't know as he would ever see our job again; I said "Why?" He says, "I was working on a job where five or six stories above me bricks were continually falling down, and every morning when I went in I didn't know whether at night I would walk out or be carried out." It seems to me the adoption of some safety regulation should be made so those things could be avoided.

MR. A. E. DAVIDSON: I am more pleased than I can say to hear this subject taken up, and to hear the question of Mr. Cahill asking if there are any statistics on building accidents. I attended the National Safety Council meeting in 1913, and listened for three or four days to reports from the mines, factories and mills, telling of experience in accidents and discussing how to prevent them. The last day I got up the courage to stand up and mention building construction; but it was so far away from the thought of that assemblage that it wasn't even noted in the reports. I joined the National Council and I have attended every meeting since; they are doing welfare work. I asked Mr. Price to-day what was being done along construction lines and you have heard his answer. They are beginning to take notice.

I would like, in a way, to answer Mr. Cahill's question about statistics, because I have been keeping them in a crude way for a good many years; that is, clipping reports of accidents from the daily papers. A year ago last spring I took a clipping bureau's report; then I went and made a tour up the coast; when I came back these reports were on my desk; the reports of one hundred and eleven days; there had been two hundred and twenty-two accidents; forty-six men killed, one hundred and sixty badly injured — no, two hundred and some odd; four hundred and sixty scaffolds had gone down over the country; a good many painters had been hurt by their ropes breaking, a good many falls resulting from that cause. Without any doubt the accidents in building construction are way beyond anything in the factories. I went down to Massachusetts two or three years ago and went to see Mr. Holman; — I believed this to be the case, so I have interviewed everybody. I have not heard it talked on the floor of conventions because it didn't seem to be interesting. I went and interviewed Mr. Holman, who is in charge of all the accident statistics in the State. He said he was very glad I came in to see him; that he had kept those accidents under the heading of "Power Transmission." I told him I thought if he would investigate he would find building construction, because of the methods employed, was the cause of more accidents than any other. He put his people to work, and before I left the building they had figured up some three months' time and they agreed with me that that was true. If that is true, gentlemen, don't you think it is high time that we get right after the question? I have been in the building industry in New York City for thirty-five years; I make a specialty of furnishing builders with equipment, scaffolding and so on, for such buildings as the Woolworth, the Grand Central depot, the Singer building, and that class of work; regarding that class of men, I know that construction work can be made as safe as you can make your factories; but you have got to go about it and do something and find out what should be done and then do it. I am very, very glad to know that that question has been taken up.

MR. HATCH: I want to add just a word. We have a great deal of information in the statistics we collected in 1911 to 1914 as to accidents happening in building work. For example; we know that of fatal accidents the largest number in that four years was due to falls; workmen falling from scaffolding, or into hoist-way openings, and so on. We also have a great deal of information about high scaffolding accidents, whether they are due to breaking of scaffolds, or tipping of planks, or breaking of ropes, and so on. I want to emphasize what the last speaker has said. I have been impressed with the fact that here is a peculiar hazard which has had very meagre attention; a hazard greater than the factory hazard, so far as serious accidents are concerned; and while we have been going after factory accidents for a generation in the State of New York, we have just made a beginning in the matter of construction accidents.

MISS MILLER: Have you any statistics of accidents of men who wash windows in very high buildings where there is no protection. I saw a man washing windows on a six-story building as I came along and it was very awful to see; and he had absolutely no protection. Happening to see it made me think of it.

MR. HATCH: That kind of accident was not recorded in the State of New York prior to the time of passing of the compensation law, and we haven't yet completed annual figures for the numbers of those accidents. But the Compensation Law has brought to light a considerable number of such accidents, and, of course, when they do happen, they are very serious because they are falls from high places on to a pavement and are serious cases. As soon as we can complete a year's experience we will have some figures on that point which I think will be very interesting.

COMMISSIONER ROGERS: Any others wishing to speak upon this subject?

MR. CRUM: I was reading an article the other day by Dr. Holt which interested me very much, and Dr. Holt concluded in something like these words: "If we ever hope to solve the business mortality problem, our activities must be along three lines: statistical, preventive and curative." I was interested to know that he put statistics first, because I think if you don't know your problem you won't be able to deal with it efficiently, or at least with most of them. Dr. Hatch has done splendid work in New York, as I have had occasion to know, in the gathering of statistics years ago, to get informaton along the line of questions that have been asked this afternoon; and the advance there has been constantly in the right direction — forward. I think Dr. Hatch deserves a great deal of credit for the work he has done.

MR. BURKE: Mr. Chairman, the paper read this afternon by Mr. Hatch is very interesting; I think it is the first time I have attended such a convention. What is uppermost in my mind, and what the doctor can very likely answer, is this: Would you suggest that an accident should be reported to the Industrial Compensation Board and also to the Workmen's Compensation Board — double report — or do you think one report should be arranged to the Workmen's Compensation Board?

MR. HATCH: Your question is whether or not both to the Industrial Commission and to some other department of the State?

MR. BURKE: Yes, or to one of them?

MR. HATCH: I think decidedly one report is all the State ought to require of employers. It is a good deal of work to make out those reports, provided they are made out the way they ought to be. In New York we had exactly your question to decide.

When the Workmen's Compensation Commission and the Department of Labor in charge of inspection, etc., were consolidated in 1915, both of the old laws were left on the statute books, which provided for the reporting of accidents. What was done was to take the two former reports and draft one blank to serve both ends; then we did away with a double report by asking employers for one report, which for administrative reasons must go to the Compensation Commission, because that is where individual cases have to be handled first of all. Then they come later to the statistical bureau, or are referred to inspectors, coming last to the statistical bureau for statistical compilation and study. I am fully convinced that it is putting too much of a burden on employers throughout the State to ask that the same accidents be reported twice. One report ought to be used for both purposes, in my opinion.

MR. REGULA: Mr. Chairman, I would like to say that you can put these statistics in a plant to practical use, and not alone use them in a report to the Commission. In this way a number of plants have come to recognize that a competition between departments in a plant goes a long way towards getting the interest of the workmen; you can take, those statistics, paste them on a bulletin board in, perhaps, the machine shop, and show from month to month in a graphic way how the accidents in that plant have been reduced. You can do the same thing in your wood-working shop, perhaps on one floor or possibly in one building, in competition with another. Or, if your operations are extended to various parts of the country, by showing how your plant in one section of the country has been able to reduce its accidents as against a plant in another section; in that way you make a practical use of these statistics you are gathering from time to time.

MR. KOHLER: I have been listening this afternoon and yesterday to a whole lot about statistics, or whatever you call it; we have had a lot of them, but we have not come to anything definite in any way, shape, manner or form. If I am interrupting this subject I hope you will excuse me.

MR. E. B. PATTON, State Industrial Commission: Mr. Kohler doesn't have the disregard for statistics that his remarks would lead you to think, because I have found out in conversation with him since the morning session that the local union of which he is a member has records dating back more than thirty years, and a detailed report of every accident that occurred in which one of their members was injured. I think that organization is to be commended for keeping statistics of that sort, and I hope that organization will some time or other make that information public. If he doesn't do it, I shall be very much inclined to put somebody on his track to have somebody do it for him; and I only wish a great many of the unions would do as well, and make such statistics available for the information of all of us. No one, I think, has any distaste or dislike for statistics, other than the name — the name is unfortunate — but the thing itself we can't get along without. Just forget the number of esses and that sort of thing, and do keep available the information which Mr. Hatch's paper indicated. It will be of great service to all employers and to every one who has any interest whatever in lessening the accident total.

MR. KOHLER: I might say that I did state this morning something to that effect; but I am not used to getting up among an audience like this, but I am like an Irishman, once I get started you can't hold me down. I am a millwright; and as a mechanic I might say I have been in the business at both ends of it. I have always found the efficient man the trained man; I have always found him the best for safety first. Thus, if you have a trained man and an efficient man to install your machinery — the machinery end of it, is what I am connected with — you lessen the danger of accident through improperly installed machinery for transmission, and so forth. I stated this morning eighty per cent of the factories in Brooklyn and in Greater New York were disregarding the law on that subject; and I mentioned about some big set screw sticking out of a collar; and as I was going out of the door, somebody said, "That fellow is full of hot air," or something like that. I didn't mean that all set-screws were sticking out, I meant in general; the couplings, the pulleys on the shaft, and the closeness of pulleys together; and the closeness of a pulley to a coupling, and also the overhead erection where they have got the counter-shaft, where they have a belt over the man's head. I am speaking of safety first in a factory, where all of these accidents could be eliminated, if machinery were properly installed at the first installation in a factory. They have belts running over a man, the machine down below the operator: if anything happens that counter-shaft is pulled down on to the operator. If they went to work at the beginning and fitted up that factory so they had the pull on the belting away from him, he working on this side of the counter-shaft, why, that counter-shaft will fall away from him. That is a thing I am trying to bring up. Another thing our organization is trying to do is to license a mechanic — to license a millwright; because he is the man in the factory that looks out for everything. Somebody this morning spoke — Commissioner Lynch, I think, about having an inspector in every factory. I might say, gentlemen, if that was enacted into law — of course, too much legislation is no good — but, if that should be done, every factory would have an inspector, and that fellow would be responsible for everything that happened in the factory. Then I heard another thing this morning about a fellow going around with loose clothes on; if he followed out that idea he would have a suit of clothes skin tight; imagine a man going around with a suit like that oiling up! He would feel like a tailor's dummy, ornamental but of no use. Our organization has been in existence twenty-eight years and they have a membership of only 180; you will say, "That is very funny"; but we have an examination, so that a fellow if he wants to get in has got to be pretty good.

MR. JAMES A. MURPHY, Secretary, Bakers' Local No. 30, Syracuse: I have listened for two days about accidents and their causes, and there is one contributing cause I have not heard referred to yet, and I would like to know if there are any figures — I won't say "statistics" — as to what relation night work has to the volume of accidents. I have been connected with the baking business for a number of years, and there is a lot of night work connected with it. I have always been of the opinion that a man working nights is not as efficient as the man working days, and I would like to know if there are any figures.

MR. HATCH: So far as I know, there are no accident figures — excluding the word "statistics"— that would throw light on whether more accidents happen to men employed at night as compared with men employed in the daytime. You can see it is a pretty difficult thing to get at the facts relating to that. You would have to compare the number of accidents with the number of men employed at night; and, so far as I know, there are no figures in existence showing how many men are employed at night and how many employed in the day time, with which the comparison could be made. We have a record of accidents that occur, and our records would show at what time, because the hour of occurrence appears on the record. But the difficulty would be to get at the number employed at night as compared with those employed in the daytime. I have seen somewhere, I can't recollect where, a report of some investigation made by an individual employer, showing that men employed at night were not as efficient as men employed in the daytime. There are pretty obvious reasons why that should be so. Their habits of life are not liable to be right; they have business to see to when they should be sleeping, and then you come to the question of artificial light as compared with daylight,— greater strain on the optic nerve; and I think that the question of fatigue as affecting accidents is not nearly so important as the question of nerve strain. The fact of the matter is, that accidents occur before the end of the forenoon — that is, they are more frequent before the end of the forenoon and before the end of the afternoon. If fatigue were of main importance, you would expect the maximum at the end of the afternoon.

MR. MURPHY: If I might say another word, I might explain my object in asking the question. I, and a number of other men who work at the same business, have always believed that night work ought to be eliminated as much as possible; and I guess everybody hopes that legislation will follow from this Congress along the lines of preventing accidents as much as possible; and I honestly believe there is no man working nights for years who is as efficient as the man working days. To begin with, it is against nature; also. a man trying to sleep daytimes hasn't as good a chance as the fellow trying to sleep nights; so many noises; if nothing else, the members of his household are around and prevent him getting his proper rest, and when the man goes back to the bake-shop at night he is not in as good shape as the man that slept at night. And if legislation is to follow from this Congress, as I hope it will, I hope they will legislate to eliminate night work as much as possible. Of course, it cannot be eliminated entirely, we all know that; but it should be eliminated as much as possible.

MR. NELSON, Binghamton: Mr. Murphy's question suggested another question, which, to the best of my knowledge, has never been brought up. I would like to inquire of the statistician here if he has any figures as to the influence of John Barleycorn on industrial accidents?

MR. HATCH: We have no records in the Department on that matter. I know individual employers have been making investigations along that line, trying to find out just what the condition of men injured was prior to the accident. It is a very difficult thing to get at. Up to the present time I have seen nothing very conclusive — but, as I have said, a number of individual employers have taken it up.

MR. NELSON: To my mind it is a very serious question; and inasmuch as many employers try to prevent accidents by safe-guarding a position, it seems to me that is a matter of much concern and entitled to research, as to how many injured men come to their work in at least a partially intoxicated condition previous to such injury. I suggest this in all seriousness, for it is a matter in which I am vitally interested, and we are all interested in trying to eliminate accidents.

MR. BURKE: I would like to ask Mr. Murphy what is the objection to inaugurating day work in the bake-shop?

A VOICE: We all want fresh rolls for breakfast; that is the answer.

MR. MURPHY: There are a number of reasons, and the time is short. But I will state that we have inaugurated in Syracuse — in May, 1903 — that is, thirteen years ago, we inaugurated day bake-shops; and the bake-shops, except two or three, or three or four, non-union shops work daytimes. I regret to say that we lost one shop, that had worked for two or three years and then went back on it. But every union shop works days, and we find gets along just as well as the fellow working nights. So I say there are a number of cases where the work could be eliminated without any hardship to the employer or anybody else. There is a big field; and I believe night work has as much to do with accidents as any contributing cause; because — I think you will agree with me — of the fact that a man working nights and trying to sleep days is not as efficient as the man that works days and sleeps nights.

MR. CONNORS, Endicott-Johnson & Co.: I would like to ask Mr. Hatch if there are any statistics in the case of infection? Many of our cases are from infection, where they get slight scratches from tacks and so on, and oftentimes have to lose a finger by an infection. I would like to know if there are any statistics in regard to it, and if there is any one here who knows any preventive measures for infection.

MR. HATCH: Commissioner Mitchell, I think, will answer that inquiry.

COMMISSIONER MITCHELL: The question of infection we have had up more than anything else, and we have had to deal with it. Dr. Lewy, the Chief of our Health Department, has compiled statistics showing the number of infections that follow industrial injuries, and his statistics show that 17 per cent of all finger injuries result in infection. Now, gentlemen, that means this; that an accident to a finger, which may be and most of the time is, simply a perforation — a laceration — or a slight injury to the finger, becomes infected, and the infection causes the loss of the finger;— either it causes an ankylosis or an amputation. Now, these infections could be cured — could be prevented, rather — by giving first aid treatment; and if every factory — if every manufacturer — would make a rule insisting upon an employee being treated with first aid treatment they could reduce the cost of an injury — could save the finger — instead of, as it is, paying for it. I say 17 per cent of our finger injuries result in infections, and 17 per cent of injuries have got to be paid for by the loss of the finger. If you lose a thumb it costs sixty weeks' wages; if you lose an index finger it costs forty-six weeks' wages; if you lose a middle finger it costs thirty weeks' wages; if you lose a little finger it costs fifteen weeks' wages. Now, in money, that is a great deal; of course, in suffering it is a great deal more; and after all, the cost in suffering is the thing we ought to consider most. So I say all these things — these records we make, or statistics, they are all interesting; Mr. Hatch keeps them, and he can tell you how much money it costs; but, gentlemen, the great thing it costs is not money; it is the cost in suffering; it is a cost in those things that appeal to the best in men; it is the cost in heartburns; so I hope — I am going to speak to you to-morrow — I hope from this Congress will come a better understanding between workmen and employers; a better understanding of what they ought to do — try and help each other out, and try and stop this awful suffering, this awful loss, from unnecessary industrial accidents; for, after all, we can prevent half of them. We can't prevent them all; there is about one-half of these accidents we can't prevent. They are simply as was said and recognized years and years ago — they are acts of God — they are things we can't help. But there is one-half of them we can prevent; and you men who are managing these factories, and you men who are directing the unions, and you gentlemen who are concerned with the social welfare organizations, if we can all direct our facts and our actions in an effort to prevent these, or in an effort to try and concern ourselves with our mutual interests, if we can get together, if we can try and make our plans for social welfare — social betterment — if we can sit down around a table as men ought to do and try and concern ourselves about those things that are best for our mutual welfare, I am quite sure that we can do more in that way than all the laws it is possible for any Legislature to enact. You know, I have often said, in my concern about the relations of capital and labor — I have often said this,— that if the employer and the workmen would sit down together and look each other in the face, look each other squarely in their eyes, that they could adjust their difficulties without recourse to strikes and lockouts and with the attendant suffering and misery. Because, gentlemen, a man can't lie when he is looking another man in the eyes — he can't do it; and so it is in this effort we are trying to make in the State of New York; to make our State the peer of all States in reducing the number of accidents. I say, if we can organize in every factory, in every workshop, on every railroad, if we can organize a committee of workmen and employers — workmen and managers — especially managers — who will meet once a week and who will talk it over, about the means of preventing industrial accidents — I say, if we can do that, gentlemen — we will reduce these accidents at least one-half.

I don't know whether you gentlemen know what ex-President Roosevelt, when he was President of the United States, said; he made the public statement that more men are killed and wounded by industrial accidents than would be killed or wounded if this nation were continually and perpetually at war with some other nation. Now, I imagine when he said that, he had not in mind, of course, this great war that is going on among the nations of Europe; but, making allowances for this unexpected loss of life that is happening in the European countries — making all due allowance for that — when you consider that 35,000 men are killed and 2,000,000 of men are injured every year in the peaceful conduct of our industries, is it not high time that the State and national government should exert every possible effort to protect the lives and security of the men, women and children of labor?

I said I was going to speak to-morrow; what I mean is, I am going to preside to-morrow. I have things in my mind I can't say to-morrow; it is in my mind now, but I can't take the time — I wish it were possible; but I hope from this Congress there shall be a movement started between employers and workmen that will result in the reduction — you can't prevent them all — I say, in the reduction of these accidents. Gentlemen, if it were possible for this audience — if it were possible for the people of the State of New York — to pass through our offices in New York city or Albany, and see that seemingly endless procession of crippled men, of widowed wives, of sorrowing mothers, of orphaned children, as they pass through our rooms — 150 a day the average is — and they go through there on their crutches — if you could see these people pass through our offices, I am quite sure the great heart of the people of New York would respond, and they would prevent this awful suffering by every means in their power.

Now, gentlemen, I am afraid I have made a speech instead of answering the questions asked; but what I want to do, what I am concerned about, is that the employers and workmen of the State of New York will, as the result of this Congress, get closer together, and that they will do whatever they can to prevent the suffering and misery that is easily avoided from industrial accidents.

MR. NELSON: I want to endorse everything that Commissioner Mitchell has said, and his remarks on the subject of infection suggest something to my mind. I understand this is a cosmopolitan meeting this afternoon, employers, employees and others; and I want to say that, so far as matters of infection in our factory are concerned, an injury is never brought to the attention of the employee's neighbors at the factory, or the office, until from a week to ten days, until after infection has developed, that an accident has happened; of course, as employers, we have to pay for that, whether the accident happens in our plant or not; most of them, I am pleased to say, have been caused by stubbing on a nail or scratching on a crate or something like that, which it seems almost impossible to avoid; but if our employees, our friends and neighbors in the business — we are all employees in the same industry at our plant — and I presume most all of our men, if they could be made to understand the importance of it, would report it — or could be made to report it. We have a first aid kit and could give them peroxide and salve, which wouldn't cost the factory a penny more, and we would have the benefit of their labor; and I think there is, possibly, opportunity for education along that line. We don't want accidents, and they don't want them; but it is these little scratches and so forth that bring the infection; and I was very glad to hear Chairman Mitchell answer the question in the way he did, because it is a matter we are all concerned in.

COMMISSIONER LYNCH: Before the gentlemen go out, I think it would be wise to call attention to this evening's program, to take place in this auditorium. It consists mainly of moving pictures with explanations by competent speakers and will make a very enjoyable evening session, beginning at 8 o'clock and lasting till about 10 o'clock; and the Committee would be very well pleased if the local manufacturers could in some way get in touch with their people and invité their workpeople to be present here this evening so that they may have some representation in this Congress; and the eye pictures are the things that can be shown bringing this great total of accidents which have taken place in this State before you, the manner in which they happen, and suggesting some reforms. And this also applies to to-morrow evening. I hope that the local manufacturers who are present this afternoon will notify their less diligent brothers, inviting them and their people to be here to-morrow evening. If they can reach them for this evening, well and good; but I would like to have them notified for to-morrow evening; and I wish to state that this evening's session will be highly entertaining and instructive.

COMMISSIONER ROGERS: If there is no further discussion of this question before us, we will now adjourn to 8 o'clock this evening.

TUESDAY EVENING, DECEMBER 12

PRESIDING OFFICER: THOMAS M. GAFNEY, SYRACUSE

MR. GAFNEY: During my young life, varied as it has been, it has been my privilege to preside over a good many different occasions. I think perhaps my repertoire may extend from the Hod Carriers Union to a Russian Tea and the Suffragettes. And just to convince you that all our heroes are not necessarily dead, it has also been my privilege to deliver a suffrage speech at a prize fight. Well, I want to be frank enough to confess that I don't know just exactly what the duties of a chairman may be upon an occasion of this kind. But, however, and that "however," by the way, is one of the most beautiful words in the English language. All of we prominent orators, from Bill Bryan way down here to Tom Gafney, worship at the shrine of that however. Let me say, however, that this Safety Congress has far exceeded my wildest hopes and my wildest dreams. To my uninitiated mind a safety congress with its gruesome pictures and exhibits during the beautiful Yuletide season reminded me somewhat of a Fourth of July parade crossed by a funeral procession. I have not been permitted to be present at all of these sessions, and I have not read all of the speeches in the papers, but so far as I have been able to glean, much of the blame for industrial accidents is placed at the door of the workman. And I am constrained to agree that no doubt that is true. I call to mind that a few years ago, when the Mergenthaler typesetting machines were put in one of the printing offices of this city, that they came with a hood over the metal pot, and that connected up with a chimney so as to carry off the dangerous gases. Now, according to my figures, and they are subject to considerable revision perhaps, but about one in five of the average workmen, or one in seven, is what you might call a "Swift," and probably one in about seventy-five might be termed a "Phenomenon." Now after these machines were installed a few months, this aforesaid "Swift" decided that this hood was in his way and he could not make the very best time. I never could figure why, but he so decided, and he asked the machinist if he would not take that hood off. And he did, and then immediately followed all the others, who wanted that hood taken off from their machines. And presently all the fumes and all the gases from the metal pots on the machines went up in the atmosphere and it was surcharged with these dangerous gases. I think that the Union Printers' Home at Colorado Springs may be the result of a lot of this foolishness. Suffice it to say that to-day the typesetting machines that are placed in printing offices have a hood there, and it is ordered there and is ordered kept there by the operators and is not being removed any more. Now there is another side to this question, however. You can readily appreciate that in many of our shops and factories where previous to this merciless, and I might say murderous stop-watch system, where men are keyed up to the very highest pitch, where the task is cut out for them usually by the swift man — and it is just as natural as life that in a crowd of workmen there will be some men who just naturally can work faster than the others — that task cut out by the swift man must be followed pretty generally by all the rest.

Now, I remember very distinctly a few years ago that I was employed in an evaporator or dry house, evaporating apples, and a lot of us lads were lined up paring apples with a little paring machine. They may do it different now. But I observed at that time that every boy had his own peculiar way of running that simple little machine. Now if that is true with that little machine, it is also true with bigger machines and with grown men. And so when a man is keyed up to the highest possible pitch, and you bring in some sort of a contrivance and place it upon his machine, keyed up as he is, he will quickly say that that interferes with his work, and that he is more liable to have an accident while that is there than without it. The same thing may be true of a man who, keyed up that way and you bring a pair of goggles, and the perspiration from him will naturally gather on the goggles and they will get steamed up and he will say he can do better work without these goggles and he throws them away, or he raises them up as we saw in last night's pictures, and then it happens. Now I think I can safely express the sentiment of the representatives of labor of this State that no matter whether one life has been saved through the instrumentality of this Congress, or that a finger of an individual workman of the big State of New York has been saved through this Congress, that this Congress has done much good. It has brought together the representatives of the workers and the representatives of the employers, and they have all been seated here upon this floor, and we are confident all moved and actuated by the same general and commendable principle, the conservation of human life and of human energy. And this effort I cannot help but believe bodes good, and brings, I think, us a little bit nearer to that great day of all days, when every man will be glad to rise up in his place and say, "Yes, to a degree, at least, I am my brother's keeper."

Now, of course, I had a very good speech all framed up for this occasion, but I know that if I made my regular speech there would be such applause as would interfere with the rest of the program. I have been instructed that we have a regular speaker here, and Mr. Hubert Hornsby, who is connected with the National Civic Federation, is going to speak to you upon the medical side of safety.

PSYCHOLOGY OF THE EMERGENCY HOSPITAL

BY HUBERT HORNSBY, NATIONAL CIVIC FEDERATION

While this Congress has been in session, and until the end of this Congress, you have heard and will hear much very profitable and instructive discussion of safety as applied to the workman. You have heard discussion of safety devices, of protective garments, protective shields, and so on, and you have also heard discussed protective regulation and education. But there is another side of safety that has not been touched. Wherever small or large bodies of men are gathered together in the pursuit of happiness or livelihood or what not, the human element must be taken into consideration, and unfortunately the human tendency is toward carelessness and ignorance of these regulations that you have heard discussed. Therefore, as long as hazardous occupations exist, and I imagine that hazardous occupations will exist as long as industry exists, you will have accidents. Now the question is how is the best way to eliminate these accidents as far as possible and prevent the recurrence of certain injurious conditions. First of all, it does not behoove us to consider the surgical procedure in the mill. It is presumed that the management of a large enterprise is going to choose to the best of his ability a man capable of handling the surgical end of his work. He is going to choose a man who has been fitted by training and education for the practice of medicine, and therefore it would be a fallacy for him to choose an inferior grade of man for the performance of that duty. But that is not the only necessary attribute of the industrial surgeon. Unfortunately, the European clinics have in the past, and I am afraid are going to continue in the future to conduct their enterprises in such a way as to give an absolute black eye to hospitals, clinics, infirmaries or institutions for the care of the dependent sick and injured people wherever they are found, on whatever continent or in whatever city. If we are to make useful citizens out of these vast hordes of foreigners who have thronged and are thronging to our shores looking for an equal chance for equal man, it is our first duty to conserve their health. They cannot give us their best efficiency and cannot gain for themselves their best livelihood unless they have at their immediate disposal their own highest efficiency, and I am constrained to believe that their highest efficiency lies in the intelligent practice of the well-known principles of hygiene and safety regulation. So much has been said on this subject of therapeutics, that I am not going into it at all. The therapeutics of the average hospital is more or less standardized to-day. We have our certain formulas for antiseptics and aseptics. We have certain methods for the removal of foreign and metallic substances in the shape of splinters. We have certain types of stretchers and pulmotors and first aid materials generally. I am going into the psychological side of the emergency hospital, and that to my mind is the most important thing inside of your plant. Preventive medicine is so much broader than the practice of curative medicine that I do not need to enlarge upon it. To prevent illness is much more worthy the man than to cure the illness after it has occurred. When a patient, as I said, drawn mostly from these foreign individuals who have come here with a terrible fear of the hospital, inbred in them because they know in their own countries that as soon as they get inside of the clinics they are going to be butchered to make a medical holiday, they want to stay as far away as they can. They don't want anything to do with it, because they are afraid of the man in charge. They are afraid of the man in charge because he has an education superior to their own. They are afraid because he wears glasses, and because he has an imposing appearance that they are not used to. I have heard in my experience in the metal trades especially a man say, after having sustained a slight injury of some kind, "Oh, I am not going to the hospital. I am afraid of that doctor. He is so cross." And so on. They are afraid of the whole scheme. Now when a man is brought, either voluntarily or involuntarily to the hospital for the administration of first aid, it is naturally the surgeon's first duty to correct the pathological condition that he finds, but his duty only begins when he discharges his patient cured. His real service comes in the opportunity that should have been his for preventive medicine. And it is this that I want you all to consider as employers. I want you to take this subject home with you, if you can, into your emergency hospital, and to see that your surgeons apply the things, the weapons, the tools that they have at their disposal in order to eliminate this economic waste. The President of this Conference, Commissioner Lynch, told you in his opening address, of the financial waste that exists on account of the industrial injuries. This is purely an economic question. When the patient comes in and is given whatever aid is necessary, if the physician will come down to earth and talk language that the layman can understand and not begin a long dissertation on toxemia, and so on, that the layman knows nothing about, if he will tell him the consequences of neglect of injury, the consequences of neglected scratches, due to resultant infections, and explain to him in words that he can understand how these things occur, that man is going back to his bench, back to his machine, back into his mine, back into whatever occupation he pursues, not only with a weapon to protect himself against a recurrence of such injury, but also an educational weapon for the protection of his fellow-workmen. In the metal trades 70 per cent of compensable injuries are due to neglect of trivial wounds, that is, the so-called trifling lacerations, scratches, and so on, due to the manipulation of nail-making machines, screw-making machines, and so on, because they don't attend to them and have immediate attention, and they become infected and incapacity is often the result. Very often if a wound made by such a thing as a wire nail does not bleed, the man will say: "Oh, that is so inconsequential that I won't pay any attention to it." Inside of seventy-two hours, or thereabouts, the period of incubation has arrived. The malignant bacteria has got in its work and amputation is necessary. He goes into a hospital and when he comes out lacking a leg or an arm, very often lacking a life, he wonders how it all happened from a cut or a scratch that did not even bleed. Now if the ones in attendance, or the physician, and more especially the physician, as his word has much more weight than the owners, if he will explain to a man that it is not always the wound that bleeds that becomes infected, if he will explain in a few concise words of one syllable, or thereabouts, that a wound often closes after the penetration, leaving the epidermis absolutely intact so far as the appearance is concerned, but the infection may be there, that man, when he goes back and sees a fellow-workman who has one of these so-called trifling injuries will say, "Yes, but the doctor told me that it is that kind that is the most dangerous." If a workman permits an unskilled fellow-workman or foreman to remove a foreign particle from the eye with a piece of unclean handkerchief or a piece of unsterile gauze, and the resultant infection comes along, he is going to wonder how all that happened. If the physician will explain to him that it is the use of unclean instruments and unclean cloths that make these infections that occur in the factory, that cause these infections, he is also going back to his labor, and not only take with him for his own use later on, but he is going to use that knowledge for every one with whom he comes in contact. Now comes the point of what kind of a man can best do this. The man who has the greatest content of the milk of human kindness, and he had better sacrifice his surgical training than part with that same kindness, because if a physician inspires confidence in a patient with whom he is working, the patient will not have that same inborn fear of the clinic or the hospital or whatever you want to call it that he has in his own country. If he knows that when he comes into the emergency hospital he is going to meet a brother and a friend, a man who is going to talk to him on his own level, in words that he can understand, and pat him on the back literally or figuratively, he is going to come to that hospital not only when it is necessary but whenever he wants to, and that is the thing that is absolutely necessary. I am not going thoroughly into another side of this question, but there is a protective side in the practice of internal medicine that is of value. If the same surgeon has finally gained the confidence of the workmen, in all of their physical disabilities, no matter what the occasion, no matter where the cause or source, they are coming to him for advice at the inception, not at the culmination of their disorder. And it is only at the inception of these things that they can be controlled. If a man has a bad cold and comes into the emergency hospital and he is given proper intelligent instruction and treatment, a possible pneumonia is going to be avoided. If he comes in with an incipient venereal trouble, possible blindness, possible surgical disabilities of all kinds are going to be avoided. If he comes in with a lung distress, a possible tuberculosis is going to be avoided. And so on down the line. I am not going to take very much more of your time on this. All I want to do now is to lay particular stress on the carefulness with which you choose your surgical supervision. As I said before, the medical side, the actual practice of medicine, is a foregone conclusion. If you haven't a man well versed in the practice of his profession you are going to lose large sums of money. You are going to lose economically all the way through by incompetent attention to accidents. But whatever you do, chose a man who has a feeling for his fellow-men, who knows what the trials and tribulations of labor are, who has a feeling for the man who toils, who understands his problems, if not from his own personal experience, at least from his own spiritual capability of understanding these things. Choose a man who will take these people, not from a sense of obligation because he is being paid, but from a sense of duty to his fellow-man, and see that the only weapon that they can really call theirs is always at their disposal, absolute continued good health. I thank you.

MR. GAFNEY: I think we are ready for the pictures.

MOVING PICTURES

Moving pictures illustrating methods of manufacture, machinery guards, accident prevention, hospital facilities, fire drills, playgrounds, lunch rooms, rest rooms, washrooms, educational opportunities, etc., were displayed by Mr. Hornsby. The plants illustrated were the Ford Motor Company of Detroit, National Cash Register Company of Dayton, and United Shoe Machinery Company of Boston.

WEDNESDAY MORNING, DECEMBER 13

PRESIDING OFFICER: JOHN MITCHELL, CHAIRMAN, NEW YORK INDUSTRIAL COMMISSION

COMMISSIONER MITCHELL: The program does not require the presiding officer to deliver an address, and yet the temptation to make some remarks is so great that this presiding officer cannot resist the temptation to say some word which he hopes may be helpful in giving impetus to the movement looking to the prevention of industrial accidents. If it were possible for the men and women of the State of New York to pass through the offices of the Industrial Commission and observe the seemingly unending procession of crippled men, of widowed wives, of sorrowing mothers, of orphaned children, I am quite sure that anything that was possible to prevent a recurrence of these sorrows and difficulties would not be overlooked. I am quite sure that the people of the State of New York would do whatever it were necessary to do in order to reduce to the very minimum the number of industrial accidents. As Mr. Lynch stated to you on the opening of this Congress, nearly 300,000 working men are injured each year, and nearly 60,000 of them are injured so badly, so seriously as to cause them to lose at least two weeks' work. And nearly 1,500 working men are killed annually in the State of New York. Of course we become inured to the lives lost, to men killed, because we read every day of men being killed in battlefields, and every morning the papers tell us that thousands and thousands of men were killed, and we become hardened and unconcerned about this terrible loss of human life. And yet, gentlemen, this awful war that is devastating the population of European countries will end, probably in a year or two years, but the industrial accidents go on year after year, seemingly without end. It seems to me, gentlemen, that this great Empire State, with its fine men and its fine women and its fine laws, with the fine spirit that seems to animate our people, should result in a concrete movement for the reduction to the very minimum of the accidents occurring in industry. Our statistics show that, as I said before, we kill 1,500 people a year, that 300,000 persons are injured. Now that means about 14 per cent of all the men and women engaged in industry are injured in each year. That means that in the course of eight years every man and every woman who works is going to be injured. It is true, of course, that some men and women are not injured at all. That means that perhaps some men and some women are injured four or five times every year. Now what I should like to have New York do, what I should like to have the employers and workmen of this State do, is to try and work out some plan by which our State may be, with respect to accident prevention as it is in every other respect, the leading State in the Union. And I cannot make a more practical suggestion than that. The employers and workmen shall organize in each factory, in each workshop, on each railroad, a committee who shall meet at least once each week for the purpose of devising means of preventing industrial accidents. As I said yesterday, if employers and workmen shall meet occasionally, if they shall discuss in a man to man fashion the things that concern their mutual welfare, most of the difficulties that have separated employers and workmen, most of the difficulties that have caused strikes and lockouts, with attendant mieeries and suffering, can be largely overcome.

Now, gentlemen, the first speaker this morning on the subject Classification of Buildings and Materials of Manufacture as the Basis of Safety Requirements, is Mr. James C. Heckman, Chairman of the Technical Advisory Board, Associated Manufacturers and Merchants, and who is also the General Superintendent of the Larkin Company, of Buffalo, New York.

CLASSIFICATION OF BUILDINGS AND MATERIALS OF MANUFACTURE AS THE BASIS FOR SAFETY REQUIREMENTS

By James C. Heckman, Chairman, Technical Advisory Board, Associated Manufacturers and Merchants

The object of the great safety movement in industry in the interest of which this Congress is being held, may be briefly summarized as the maintenance of the bodies of all persons engaged in industrial occupations in the highest state of physical perfection and efficiency.

To this end, innumerable sets of rules and codes have been drafted endeavoring to set up standards for safety and to point out ways and means of avoiding all sorts of hazards. Many of these rules have been enacted into law, more have simply been promulgated to serve as guides and standards to those interested in providing for the safety of their associates in industry.

In a broad way, the field may be divided, as has been done in the program of this Congress, into the general groups of sanitation and industrial diseases, accident hazards and fire hazards.

In the first two groups, universal rules applying to all industries seem generally to be perfectly fair and practicable. General requirements for good sanitation are universally desirable and specific requirements covering special industrial diseases apply only to the industries having these conditions to deal with. In the field of accident hazards, a gear or belt should be guarded, no matter what kind of a machine it is on or in what industry it is employed. Industries employing no gears or belts automatically are not affected by such rules.

When it comes to the field of fire hazards, however, it is not so easy to fix general standards that may be fairly universally applied. The relative degrees of fire hazards involved in different industries vary so extremely that it seems apparent that consideration should be given to these variations in formulating standards or codes.

The different conditions obtaining in a celluloid factory and a metal working shop for instance, are obvious and it needs no argument to obtain your assent to the proposition that safeguards against fire hazards to life that may be entirely necessary in the one plant, may be wholly unnecessary in the other.

It is assumed in this discussion that nothing is under consideration except to make proper provision for the safety of occupants of factory buildings. It is recognized that other considerations such as safety to property, location in congested city districts, insurance requirements, etc., may frequently make desirable higher and more expensive types of buildings than may be required for the safety of the employees alone. Factory safety standards, however, should limit themselves to the consideration of the safety to life requirements only.

A study of the fire hazard to occupants of factory buildings indicates that there are three principal variable factors to be considered in any given case.

First.— The nature of the industry, with special reference to the combustibility of the materials used.

Second.— The construction of the factory building.

Third.— The exit facilities from the building.

These three factors are closely interlocked and, in order to provide reasonably for the safety of the occupants of factory buildings, it is necessary that all of these three factors be carefully considered in conjunction with each other. It seems somewhat remarkable in studying the laws and codes on this subject, to find that while the questions of building construction and exit facilities have been given considerable attention, almost no attention at all has been given to the consideration of the nature of the industry carried on in the factory from a hazard-to-life-by-fire point of view.

The only place in the New York State Law, for instance, in which I can find that this question of the character of the industry carried on in a factory building as affecting the fire hazard to employees in that building is considered, is in Rule 2 of the Industrial Code relating to the enclosure of factory stairways in existing buildings. In this rule, a distinction is drawn between buildings with combustible contents and buildings with non-combustible contents. This section of the code is one of the later enactments of the Industrial Commission and indicates, I trust, a growing appreciation of this factor as the question is studied.

Except in the relatively few cases where industries are located in very poorly constructed buildings of the fire-trap class, it appears to me that the most important factor concerning fire hazard is this neglected one of the nature of the industry carried on in the building.

A little analysis of the question of fire hazard to employees indicates that its consideration may be covered under three heads:

First.— The probabilities of the starting of a fire.

Second.— The probable rate of spread of fire.

Third.— The facilities for the escape of employees from the conflagration.

A little thought will make it clear that there is almost no probability of a fire being started by a building proper. In other words, an empty, untenanted building, doesn't set fire to itself. It is not subject to spontaneous combustion. It is only when a building is occupied that there is a probability of its being set on fire. This fact is clearly recognized in Underwriters' rates which are universally lower for untenanted buildings.

When a building is occupied there is, of course, a possibility of a fire starting from some of what are usually considered the fixtures of the building. That is to say, fire sometimes starts from defective wiring, defective flues, leaky gas pipes or things of that nature. There is, however, no chance of a fire starting from the structural parts of the building.

While I have not been able to obtain statistics on the subject, I think it will be generally conceded that by far the large majority of fires which occur in factories are started in the contents of the factory incidental to the carrying on of the manufacturing processes employed.

In considering the probability of the starting of a fire in a factory, therefore, it appears that our second variable, the construction of the factory building is almost a negligible factor and that the determining factor is the first variable, the contents of the building.

It will be recognized that there are very wide variations in the probability of fires starting in factory buildings of different characters of contents. For instance, in a metal working factory, the probability of a fire starting is very slight, while in a picker house of a textile mill, fires are of frequent occurrence. The Dean Underwriters rating schedule specifically recognizes this variation in fire causation hazard in different industries as an important factor in making rates. Much good work has been done along the line of the prevention of fires and of good house-keeping. Approved devices for handling hazardous material and safeguards around hazardous process, can greatly reduce the probabilities of fire. Nevertheless, it is to be doubted whether there is any manufacturer who is bold enough to say that a fire cannot start in his plant.

If there is always a possibility that a fire may start, it is obvious that the employees in that plant must be protected from the consequences of a fire. We cannot, therefore, consider the wide variation in the probability of fires starting as a basis for the classification of industries in regard to safety measures to be taken.

After a fire has started, we are immediately confronted with the second consideration, as to how rapidly it is likely to spread in a given case. It is this factor which is of such grave importance to the inmates. It is quite evident that both of the first two variables which I originally named, the construction of the building and the nature of the industry conducted in the building enter into this question. Fire may spread either through the structure of the building itself, if it is not strictly fireproof, or through the contents of the building.

In the majority of cases, the first spread of a fire and the one which causes the greatest hazard to the occupants of the building, is through the contents of the building itself. Except in the cases of very poorly constructed wooden buildings, the spread of the fire through the building proper, is rarely rapid enough to affect the safety of the occupants of the building.

In many cases, the spread of the fire through the contents of the building assists in the combustion of the building whereas the same building, if filled with non-combustible contents would be but slightly hazardous. In other words, a building may burn because it is well started by the heat generated by the combustion of the contents while the same building would be very difficult to set on fire if the contents were of a non-combustible nature. A relation is, therefore, set up between the structure of the building and the contents which should be taken into consideration. It seems impossible from a safety point of view to set up a proper building standard, irrespective of the consideration of the nature of the contents of the building. Provisions made to prevent or retard the spread of the fire, such as automatic sprinklers and fire-walls, are also factors which must be considered in each case.

It would seem reasonably clear, that an industry employing only non-combustible material need not be conducted in a fireproof building; in fact, it is hardly possible for a fire in a slow-burning building, with this occupancy, to spread rapidly enough to endanger the safety of employees. On the other hand, we have seen instances where, due to the inflammability of the contents, a conflagration spread so rapidly through an unsprinklered fireproof building, as to cause death, even though the building itself was only slightly damaged.

I believe, therefore, that the basis for factory building requirements should be the nature of the occupancy of the building. There should be a minimum requirement below which no factory building could be occupied by any sort of industry and from that there should be a graduated rise in the requirements, depending upon the combustibility of the contents of the building.

It is undisputed that a sprinkler equipment in a building is a tremendous factor in retarding the spread of a fire. Any code on fire hazards must, therefore, give due credit to buildings so equipped.

If these premises are correct, there immediately arises a necessity for a classification of industries on a basis of the fire hazard to life which they present to their employees. As far as I am aware, little or no attempt has ever previously been made to so classify manufacturing industries.

On the face of it, it appears to be a stupendous undertaking to consider all the possible industries of a State or of the country and to classify them on this basis. It seems unquestionable that the desirability of such a classification must have presented itself to many students of the subject. It is likely, however, that the magnitude of the task has been sufficient to deter anyone from seriously undertaking it.

The Fire Underwriters have had to give the question of the relative property fire hazard of building contents in various industries considerable attention in the making of their rates and numerous schedules of this sort have been prepared. There is a great deal in common between life and property fire hazards and it seems only natural and wise that if any study of the hazards to lives should be undertaken, due consideration should be given to the work which has already been done by the Fire Underwriters.

The Technical Advisory Board of the Associated Manufacturers and Merchants comprised of twenty-four engineers and practical factory managers, realized that in the consideration of various safety standards, particularly in regard to fire hazards, such a classification of industries would be immensely valuable. They, therefore, employed the Independence Inspection Bureau to make a study of the subject and to endeavor to produce a classification of this nature.

The Independence Inspection Bureau went to work on the basis of the work already done by the Fire Underwriters. They selected three different rate classifications used by various underwriting bodies, compared them carefully and used this comparison, together with their own judgment, based on their own experience in providing fire protection in industries, to produce a classification. In the report which they have made to the Technical Advisory Board, they have provided two classifications, dividing industries into three and five classes respectively, on the basis of the life fire hazard they entailed upon their employees.

The three-group classification establishes the following groups:

Class A.— Industries working on slow-burning or non-combustible materials. Examples of such industries are metal working industries, glass and pottery works, asbestos works, tannery and leather working plants, manufacturers of heavy chemicals, etc.

Class B.— Industries employing moderately combustible materials. Examples of such industries embrace various textile industries, woodworking industries, paper making and rubber manufacturing, etc. This class probably includes the average manufacturing plant.

Class C.— Industries employing free-burning and intensely-burning materials, which cause what are known as "flash fires." This class embraces industries making cotton batting, cordage, coal tar products, explosives, fireworks, imitation leather, etc.

The five-group classification produces a further extended subdivision. These groups may be described as follows:

Class 1.— Industries employing slow-burning or non-combustible material.

Class 2.— Industries employing moderately-burning materials.

Class 3.— Industries employing free-burning materials.

Class 4.— Industries employing intense-burning materials.

Class 5.— Industries employing flash-burning and explosive materials.

The Manufacturers' Association Technical Board has given considerable thought and attention to the study of this report. It is agreed that the subdivision into five classes, of course, gives the finer graduation of life fire risk but it is also felt that for the majority of uses, this fine sub-division is unnecessary and introduces complications in drawing standards which are not commensurate with the value of the results. The Board believes that in by far the majority of cases, the classification into three groups is sufficiently fine and recommends that this classification be used in the consideration of all standards.

It is recognized that this classification is tentative and is open to revision. There must necessarily have been some border line decisions made and some manufacturers may feel upon a study of it, that their particular industry has been classed unnecessarily low.

No such classification should be adopted for code purposes without a full hearing being given to all interested parties and an opportunity presented for correction and changes being offered.

The classification is voluminous covering some thirty-four sheets. I will not attempt to go into the details of it here. The Associated Manufacturers and Merchants take great pleasure in presenting it for the consideration of the Congress and will believe that their efforts in having it compiled will be amply rewarded if it may eventually become a basis of constructive code making along the line of life fire hazard standards.

Using such a classification of industries into three classes on a basis of their life fire hazards gives us an opportunity to classify all necessary protective measures in the same manner. Perhaps the next important subject to which it may be applied is the requirements or standards for factory buildings.

In my opinion, the present New York State law governing the erection of factories to be constructed in the future, is unnecessarily stringent as applied to some industries and dangerously lax as applied to others. The law requires that all factory buildings, irrespective of the use to which they are to be put, more than four stories in height shall be of fireproof construction. The definition of the fireproof construction given in the law is very much more stringent than the commonly accepted definition of that term and more stringent than the specifications contained in the latest building code recommended by the National Board of Fire Underwriters. Buildings built to meet this definition will unquestionably be very high grade, conflagration-resisting buildings, but I don't think I have ever seen a factory building that meets every requirement of the definition.

From the point of safety to the occupants of the building, however, a building so fireproof is by no means always necessary. A slow-burning building which will give employees ample time to reach the enclosed stairways and to exit from the building is all that safety requires. It is to be remembered also that the law applies to buildings wherever erected, even in small towns surrounded by ample grounds where there is no hazard from exterior conflagrations. The membership of New England Mutual Fire Insurance Companies have shown wonderful records for safety to property from fire, yet these companies have always accepted and have been the strongest advocates of slow-burning construction protected by sprinklers.

It has been frequently stated and published and I have never seen it controverted, that there has been no loss of life in a sprinklered building due to fire, except a few sporadic instances caused by unusual accidents where no possible fire protection could have prevented the loss. For example, there have been cases where one or two persons have been involved in a fire from gasoline, celluloid or other rapidly-flaming materials. In all cases, however, the loss has been confined to the local point where it started.

If, therefore, the records of the history of fires in a sprinklered building are so favorable, irrespective as to whether the buildings were of joist construction, slow-burning construction or fireproof construction, is it wise to require in the State of New York that no factory buildings more than four stories high shall be built unless they are of extreme fireproof construction?

The law provides that in no fireproof building shall any woodwork or other combustible material be used in any partition. We are thus confronted with the absurd situation of a man operating a furniture factory or a planing mill five stories or more in height, filled full of lumber and all sorts of wooden material in its most combustible condition who cannot erect a wooden partition around his own private office.

The law provides that in buildings over 100 feet in height, wooden floor finish may not be used. In my experience, I have not found a satisfactory floor finish for general factory purposes other than wood. The various forms of concrete floors are detrimental to the product in many cases and certainly detrimental to the health and comfort of the employees using them. The floors are hard, non-resilient and cold and it is very difficult to keep them from becoming dusty and to prevent them from wearing badly under trucking conditions. Wooden blocks laid directly on a cement floor or hardwood flooring laid on sleepers imbedded in concrete on top of a concrete slab burn so slowly that in my opinion, they present no hazard to the safety of employees. They are accepted by insurance companies in their highest grade risks. There are other minor technical points in the definition which one finds very troublesome and expensive to meet when attempting to design a practical working factory building to comply with it and inasmuch as they have no practical effect on the safety from fire to occupants of the buildings, they have no place, in my opinion, in a factory safety building code.

I believe that the ideal code should permit three classes of buildings.

First.— Frame or brick and joist construction up to the present limit of four stories.

Second.— Slow-burning construction of the mill type which has been worked out in detail and approved by the National Board and the mutual insurance companies, for buildings up to eight stories in height.

Third.— For buildings above eight stories, a fire-resisting building of non-combustible materials along the lines already provided for fireproof buildings in the New York State Law, omitting certain excessive requirements such as those already mentioned which do not present a hazard to the occupants of the building.

I believe the industries occupying these buildings should be grouped into three classes as outlined and that the code should embody a schedule making a minimum building requirement for each of the classes of occupany. Proper credit should be made for sprinkler equipment in the buildings. Enclosure of stairways should be required to provide safety zones for the exit of occupants about as provided in the present New York State Law.

I present herewith a table to make more clear the general idea. The table is entirely tentative and is made up more as an illustration of the idea I have in mind rather than for acceptance as a working basis. It should have consideration and discussion by men competent to pass judgment on such matters and be the result of the composite judgment of many minds before being considered even as a possible working proposal.

MAXIMUM HEIGHT (IN STORIES) PERMITTED FOR FACTORY BUILDINGS HEREAFTER ERECTED

CLASS OF INDUSTRY	FRAME OR JOIST CONSTRUCTION		MILL CONSTRUCTION		FIRE RESISTING CONSTRUCTION	
	Unsprinkled	Sprinkled	Unsprinkled	Sprinkled	Unsprinkled	Sprinkled
			Present New York State Law			
All classes..	4	4	4	4	No limit	No limit
			Proposed New Standards			
Class A....	4	4	8	8	No limit	No limit
Class B....	2	4	5	8	No limit	No limit
Class C....	2	2	2	8	2	No limit

Any table of this nature must appear to be more or less arbitrary and dependent upon the judgment of the individual preparing it. In order that it may not appear absolutely arbitrary, I shall explain briefly my reasons for the various divisions made.

Let us contrast it with the present New York State Law governing the erection of new factory buildings. The law makes just two distinctions. Any old kind of an industry may be conducted in any old kind of a building, without restriction as to its construction aside from proper provisions for exits, if the building is not more than four stories high.

Any kind of an industry, no matter how little hazard there is connected with it, if conducted in a building over four stories high erected after 1913, must be conducted in a fireproof building. Except for one particular case no sprinklers are required for any conditions, although the number of occupants in a building may be increased if sprinklers are installed.

In contrast to these provisions, the proposed new table provides the following:

For Class A industries, occupying frame or joist buildings, the requirements are the same as the present law. Class A industries occupying mill construction buildings are permitted to occupy buildings up to eight stories high, four stories higher than under the present law.

In my opinion, the materials used in these industries present little or no fire hazard and a mill constructed building would burn so slowly, if containing only non-combustible materials, that the occupants in the building would have ample opportunity to escape in case of fire without danger.

The requirement for industries of this class occupying fireproof buildings would be the same as the present law except that the proposed requirements for fireproof buildings are not so rigid as those under the present law.

In Class B industries, occupying frame or joist constructed buildings, the proposed schedule requires that the building shall be sprinklered if of three or four stories in height. This is more rigid than the present law which does not require such sprinkling. My reason for this requirement is that the contents of the building being of a combustible nature might easily accelerate the burning of the building itself and if the building is more than two stories in height and the fire is not retarded by sprinklers, might jeopardize the escape of the occupants. In industries of this class, occupying mill-constructed buildings, I have raised the present limit from four to five stories for unsprinklered buildings and from four to eight stories for sprinklered buildings. My reasons are that, in my opinion, moderately combustible contents would not cause a mill-constructed building to burn rapidly enough to endanger the occupants in a five-story building before they could escape. If the building is sprinklered, I believe that the sprinkler system would unquestionably control the fire so as to offer no danger to the lives of occupants up to the eight-story limit. This eight-story limit on mill-constructed buildings is largely made on the basis of its being about the practical limit for building such buildings. With sprinkler equipment, they may be safe still higher, but I think a restriction to eight stories will not be regarded as a hardship by any one. With industries of this class, occupying fireproof buildings, the conditions are the same as under the present law.

In Class C industries, I have limited the height of unsprinklered buildings to two stories, regardless of the construction of the building. In my opinion, the life fire hazard in these industries is entirely due to the rapidity of the spread of fire through the materials of manufacture and completely independent of the character of the building.

Unless this rapid spread of fire is checked by a sprinkler system, the life hazard offered employees is too great to permit them to work above the second story.

I have not provided for the employment in these industries of any new frame or joist-constructed buildings more than two stories high because I do not think they are safe.

I have made the same limits in sprinklered mill construction and fire-resisting buildings as I have for Class B industries because I believe that the sprinkler equipment neutralizes the extra hazard of the building contents.

I believe very strongly in a graded system of safety requirements which will penalize bad conditions and reward good ones as an inducement to manufacturers to improve their conditions. If a manufacturer finds that by making certain expenditures, he can put himself into a class where the conditions are less exacting, there is an inducement for him to progress. The present New York State building requirements, in my opinion, operate in just the reverse direction.

A manufacturer can continue to occupy a very poor type of building hazardous to his employees, indefinitely. He knows that if he builds a new building, more than four stories high, he will be required to build the most expensive type of building known. The result is that he does not build. Under the provisions which I have suggested, he can build a building which will be entirely safe for his employees and a very great improvement over their present conditions at a very much more reasonable expenditure than the present New York State Law permits.

Under the conditions, it might even be possible to require that after a reasonable term of years, all factory buildings be brought up to the standard requirements for new buildings.

The third variable in the consideration of the safety of employees from fire hazards is the question of exit facilities. The New York State Law and the rules at present base the required exit facilities on the floor area of a factory and on the number of occupants on the floor. These conditions, of course, are fundamental but there is a third fundamental, namely, the combustibility of the contents of a building which the law does not consider. I understand that the question of proper exit facilities is to be the matter for a separate paper and discussion and so will not enter into it here. I wish only to make this point, that no solution of the problem can be complete which does not consider all three of these factors instead of only two of them as is the present case. Here also is a problem where a classification of industries by their fire hazard to workers is essential to the proper solution.

COMMISSIONER MITCHELL: Mr. Heckman is the only person on the program to make a formal address. The paper presented by him is now open to discussion.

INDUSTRIAL SAFETY IN CALIFORNIA

BY PAUL SCHARRENBERG, EDITOR, COAST SEAMAN'S JOURNAL, SAN FRANCISCO

I am not quite certain whether I am in order just at this time. I left my home town on Election Day, and I have brought with me a message from the Industrial Accident Commission of California to this Congress, and, if I may, I will proceed to read it. I was particularly pleased to have the Chairman refer to the desire for co-operation between employers and employees, because I feel that we in California have gone about as far as things can ever approach during the present industrial condition.

It is a pleasure to convey greetings from the State of California to New York State. We of the Pacific Coast pledge the heartiest co-operation in the country-wide movement to reduce the heavy loss of life and limb caused by industrial injuries.

When the Workmen's Compensation, Insurance and Safety Act of California became effective on January 1, 1914, the Industrial Accident Commission decided to secure the very best men available to organize the Safety Department. No qualifications were asked, or considered, other than engineering ability and the possession of temperaments that would enable the men to co-operate with employers and employees. From the beginning the result has been gratifying. The primary object of reducing deaths and accidents in the industries of California has been attained as a result of support tendered by employers and employees. During 1915 there were 158 fewer deaths than in 1914.

United States Co-operation in Mine Safety

For the first time in the history of any of the States, the United States Government was asked to co-operate with the Industrial Accident Commission of California in the work of accident prevention. Dr. J. A. Holmes (deceased), Director of the United States Bureau of Mines, was delighted at the proposal that came from the Pacific Coast. An agreement was drawn up and signed in behalf of the Bureau of Mines and the Industrial Accident Commission. It was immediately approved by Franklin K. Lane, Secretary of the Interior. It provided for the delegation of a highly skilled mining engineer of the Bureau of Mines' staff to take charge of the mine safety work in California. H. M. Wolflin was selected. He had charge of the Mining Department until December 31, 1915, when he resigned to become the Mine Safety Engineer for the Bureau. He had the advantage of going into the field with the support of both Federal and State Governments. Mr. Wolflin was very successful in his efforts and organized a small force of deputy mine inspectors, chosen as a result of a thorough examination conducted by the State Civil Service Commission. Half of Mr. Wolflin's salary and expenses was paid by the Federal Government and the other half by the State of California. He made a careful survey of mining conditions and recommended numerous changes that have been followed in practically every instance, so that the work of mining may progress without the drain heretofore considered necessary on human life and limb. Mr. Wolflin was succeeded by Edwin Higgins, also a United States Bureau of Mines engineer and a man exceptionally well qualified to continue the work. He has organized a miners' Safety Bear Club among the miners of California. This club had, on November 1, 1916, 5,378 members, and each week brings additions to the roll.

Mine Safety Rules

On June 11, 1915, there was held in San Francisco a public hearing to consider Mine Safety Rules. These rules had been prepared by a committee representing the California Metal Producers' Association and miners' organizations. It was impossible for the employees to attend the committee meetings. They presented their views through the mail. The result was that the employers were very largely instrumental in presenting a splendid set of rules for consideration. After full opportunity for discussion, the rules were made permanent by the Industrial Accident Commission and became effective on January 1, 1916.

The advantage of the system before described is that the employers and the employees in an industry prepare their own orders, rules or regulations. This takes the preparation out of the domain of politics, gives time for careful consideration and places the work in the hands of men who know the business requirements and who are best qualified to act intelligently. This method has proved all that could be desired.

Two Important Maximums

The Industrial Accident Commission wants to secure a maximum of safety at a minimum of cost to the employers. This is not as difficult a task as might be considered at first glance. Home-made safeguards are advocated. Our safety engineers have the ability to show employers how to construct these guards or to use waste wood or iron to protect men from dangerous places or from coming in contact with moving machinery.

Public Hearings in All Industries

The California law calls for public hearings to consider safety requirements, and the Industrial Accident Commission has full authority to make proposed orders permanent after hearings are held. Recognizing that it is impossible for three busy men to acquaint themselves with the needs of diversified industries, the California Employers' Federation and the California State Federation of Labor were asked to appoint small committees to supervise the preparation of safety orders, rules and regulations. There was an immediate and favorable response from both organizations. Sub-committees of those engaged in the different industries are now busily at work ascertaining what is needed to make employment safe. Care has been taken to see that employers, employees, insurance men and others who may be specially interested are given representation on the sub-committees. The central committee meets in San Francisco. In Los Angeles the Merchants' and Manufacturers' Association and the Central Labor Council have selected energetic committees to co-operate with the committee in the North. The same applies to the sub-committees. General Safety Orders became effective on January 1, 1916, and many of the industries have been cared for by orders specially prepared to meet their needs.

Safe Electrical Construction

Another department of the Federal Government that has kindly referred to the activities of the Safety Department is the United States Bureau of Standards. Dr. E. B. Rosa has complimented the Industrial Accident Commission on the thoroughness of its operations in the field of electricity. All the large and nearly all of the small electrical plants have been carefully examined by our expert, and Dr. Rosa said that his recent visit to California led to the conclusion that this State was probably the equal of any State in the Union in its intelligent effort to provide industrial safety. Last year our electrical expert visited New York and Washington, D. C., to consult with representatives from other States so that there may be adopted standards for electrical construction.

High-Grade Safety Experts

John R. Brownell was selected to head the Safety Department. He studied at the Massachusetts Institute of Technology and had wide experience in safety work in the industries. Just prior to accepting the offer tendered him by the Industrial Accident Commission, he had 7,000 men under his care at the Pennsylvania's Steel Company's plant at Steelton, Pa., where he was the safety expert. He brought to California a knowledge of the latest developments in his particular field. Four engineers were selected in San Francisco and one in Los Angeles during 1914, and the force was increased during 1915 after the State Civil Service Commission had conducted competitive examinations. These men are experts in their different lines.

Two Safety Museums

A Safety Museum has been installed at 529 Market street, San Francisco. It is operated under State auspices and has approximately 150 exhibits and a department showing photographs and pictures appropriate to such a museum. No recommendations are made to employers as to the best devices obtainable, but all exhibitors are given an equal chance and employers fully advised as to what is available in their particular vocations. Some of the largest industrial concerns in California have circularized their employees urging them to visit the Safety Museum so that they may keep in touch with the latest inventions for saving life and preventing accidents. Many of the exhibits have been sent to California from the Atlantic Coast. The second Safety Museum has been opened in the Union League Building in Los Angeles.

"Safety First" Conferences

The Industrial Accident Commission has held "Safety First" Conferences in the principal cities in California in order to let the citizens know what was being done, impress upon them the need of co-operation, and to show a number of pictures that vividly impress upon the mind the importance of "Safety First." Nearly all these pictures deal with California factories and work shops. Some of them show the "before and after" effects of safeguarding.

Employers have frequently asked for the suggestions of our safety engineers. The compulsory compensation features of the law drew special emphasis to the need of preventing accidents. Insurance is not compulsory in California, and many of the larger establishments do not carry coverage. This means a lively interest in industrial safety, and those employers that do insure realize the effect accident reduction has on the rates. The insurance companies have well-equipped safety departments, and are operating in conjunction with the State Safety Department, wherever possible. Another important factor in "Safety First" is the reductions in rates that are given for the installation of safeguards. This merit-rating plan has proved advantageous.

Further Steps to Decrease Accidents

The Industrial Accident Commission is a member of the National Safety Council, and secures the bulletins that are issued weekly.

One of the officials of the United States Bureau of Mines was delegated early in the year to give first-aid training to the miners of California. Several hundred men have been informed of the best way to treat their injured fellows. Plans are under discussion to enlarge this feature of our activities.

Last year there were more than 60,000 industrial accidents reported in California. This number is altogether too large. One of the main purposes of the Industrial Accident Commission is to reduce this heavy toll on the workers to a minimum, and to get the best results that come from sanely and intelligently co-operating with all those interested in any given industry. Accident bulletins have been sent out to employees. They have been printed in different languages. Special attention has been given to the formation of shop committees so that the men may take that interest that is so important in order that the desired end may be attained. The use of signs and general methods of publicity have also been urged in this connection.

Looking back over the operations of the last two years and ten months, the California Industrial Accident Commission has the satisfaction of knowing that its plans have worked well and that there is every prospect for a continuance of united effort to remove the reproach from industry that human life has not been taken into the consideration that it deserves.

Industrial Deaths Reduced

The Industrial Accident Commission has issued figures giving the number of deaths in the industries of California during the year 1915 and draws attention to the list as compared with the statistics for 1914. In the latter year there were 691 workers killed and in 1915, 533 workers gave their lives to the industries of the State. The following table shows the reductions in the death list by occupations (the word "Service" includes employees of men in the professions, as well as those engaged in hotel service, apartment houses, restaurants, domestic servants and amusement or entertainment employees):

	1914	1915
Agriculture	62	55
Construction	115	78
Extraction (Mining and Quarrying)	86	71
Manufacturing	121	99
Service	24	25
Trades	24	20
Transportation and Public Utilities	289	172
Unknown	20	13
Total	691	533

This effective work in behalf of "Safety First" has been accomplished as a result of cordial support from employers and employees, the public generally, and the press of California. It is a striking result to be able to show a reduction of 158 in the death roll of 1915 as compared to 1914. That this reduction comes as the result of careful planning is shown by the decreases in the main industries of the State, excepting Service, where the record shows an increase of one death in 1915 over 1914.

It is the hope of the California Industrial Accident Commission that statistics will show a substantial reduction for each succeeding year. Our aim is that no preventable death shall take place.

In the meantime we are proud of the work already accomplished, for the 158 lives referred to speak in terms of breadwinners saved to wives and little children and an enrichment to the State's citizenship.

GENERAL DISCUSSION

Mr. Cannon, Workmen's Compensation Service Bureau: If I understood Mr. Heckman right, he stated that there had never been any attention given to the consideration of the nature of the industry carried on in the factory up until the time the classification was made. I wonder if he knows that all of the plants in this State have been rated under a schedule since the Compensation Law went into effect, which does just exactly this thing, and that under that schedule there are three classifications of industries according to the fire hazard. That has been in operation in this State since, I think, July, 1914, and was in operation in other States for about a year prior to that.

MR. McDONALD: In looking this over, I have been in a cotton mill all my life, and of course you know the picker room of the cotton mill is very susceptible to fire. It is very inflammable material, and I have gotten to be quite a crank on the sprinkler system, and I have been wondering if it would not be better to insist that all buildings put up for manufacturing purposes in the State of New York over two stories high, that employ above a certain number of hands, should have a sprinkler system. Wouldn't it help a great deal if all of our manufacturing buildings were sprinklered, regardless of the material used in that building. I have seen marvelous results obtained from that thing, and I have seen fire run along belts and rope drives, and be snuffed out by the efficiency of a sprinkler system. And I have thought that if we insisted that buildings should have a sprinkler system it would make a tremendous difference in the death rate from fires to our employees.

MR. HECKMAN: I think I am just as strong an advocate as the gentleman who has just spoken, and I think it would be highly desirable if every factory in the State had a sprinkler system. It is a question in my mind, however, that in an industry employing absolutely non-combustible material, like a metal working plant, or glass works, where there is nothing to burn to start the fire, or where there is no considerable amount of combustible material in the building or in the plant, whether a sprinkler system should be required. I know of such plants that have a sprinkler system in, and find that they are good investments, but from the point of view of safety to the inhabitants of the building, it seems to me that would be rather a harsh requirement. I have suggested such sprinkler systems in buildings where in my opinion the occupancy required them.

MR. JONES, Jones of Binghamton: I want to ask Mr. Heckman a question in regard to his paper. He suggests as being most advisable a wooden floor on a concrete base. How does he take care of the germ proposition. How are you going to clean that wooden floor.

MR. HECKMAN: I do not see any more difficulty in cleaning that floor than any other wooden floor. You have your concrete floor, the sleepers and the space between the sleepers is filled up solidly with concrete, so that there is no space there, and then your wood floor is laid on that.

MR. JONES: But on your surface you have a germ proposition. The question of the germ proposition on the wooden floor and the concrete floor.

MR. HECKMAN: The wooden floor may be scrubbed as a concrete floor may be scrubbed.

MR. JONES: Will you get germs out by scrubbing a wooden floor as you would if you flushed a concrete floor?

MR. HECKMAN: I don't know as I have given that particular point attention. It does not occur that in the average factory such antiseptic conditions are necessary. In a hospital or shelter that would be very important.

Mr. H. G. Meacham: As far as the matter of antiseptic conditions are concerned in a wooden floor composed of wood blocks, treated as they are before laying them, and smeared over the top with pitch, it seems to me there is absolutely no chance for any germ lying in that floor. To my mind it is an ideal floor.

Mr. Burke: Mr. Chairman, Ladies and Gentlemen: The paper read by Mr. Heckman here this morning is a very important one, and I am looking at it in the interest of the manufacturer, the employees and the factory inspection department. It is a well-known fact of course that you have in New York State, the same as in other States, miscellaneous kinds of industries. We have the sprinkler system. But the difficulty the factory inspector is usually confronted with is to try and gauge the temperament of the employees in the industry in order to safeguard them. Now it is a well-known fact that you may have smoke in the factory and the sprinkler system has not started to work, but with a little smoke and a very little fire you have a panic. Where we find closed stairways and fire-escapes that were inadequate to take care of the inmates, and a sprinkler system, it seems to me that the insurance companies and exchanges and those who usually follow contracting in a general way are out to safeguard the building, losing sight, you might say, for the moment of the inmates. Not intentionally, but that is our view. Now we have fire-escapes, we have these exits provided, and even then, with all of the exits provided, there are times when there is loss of life by reason of panic, caused by the temperament of the inmates of that factory. It is a very hard thing to regulate, and we have never been able to say truly of any building that I have ever seen, once it is occupied, that it is absolutely safe for the inmates. The question of floors has been introduced. You may put in the best floors possible from a sanitary point of view and, even then, some factory owners will not give the floors the attention that they require to keep them sanitary. Not only that, but as the gentleman has suggested here, various industries operating in a factory building, should be classified. Quite true. That is a very good idea. But here is what usually follows. We will say a gentleman or a company may start a factory, conducting it, we will say, as a textile factory. Well, it subsequently follows, probably, that they will sell that building to somebody else, who starts another line of industry. And once these plans are approved by both the municipal and the State departments, and the inspector subsequently passes over the ground again, after the tenancy has been changed, and holds that the later industry is more hazardous than the former one and requires more exits, the management finds fault and raises a very strong objection toward meeting the recommendation of the factory inspector. They may go so far as to tell you that the underwriters' inspectors have given them a certain rating on the building and the contents. But there is one thing that is paramount to all, and that is the safeguarding of the inmates from a factory inspector's point of view, and I know it is the intention likewise of the owners of these factories, that they want to make their factories as safe as they can to their inmates. So I see a great many objections to this. The reason why I introduced myself in connection with the paper is that we might have further discussion, because there is a lot of education that may be obtained along that line.

MR. ——: If we can require a certain standard for a building to be occupied by a certain industry, cannot we require that before any building can be occupied by another industry that it must be suitable to that industry?

COMMISSIONER LYNCH: I think it is regrettable that Mr. Heckman's paper could not have been printed in sufficient number of copies to supply the people who are here this morning, because it is somewhat difficult to discuss a paper that is rather technical by hearing it read but once, but the same thought that is expressed by Mr. Burke occurred to me. We construct a building for a particular industry and then the industry failing, as they sometimes do, it moves out and a more hazardous industry occupies the building. Now what is to be done then? The answer made by the gentleman who just took the floor is one of those plausible answers that pushes aside the problem. Cannot we just do this? Of course we can, but then again we cannot. The money is invested in this building. It represents a large outlay, and the man with the hazardous industry says, "Well, why didn't you have it built right in the first place? I assumed it was built for factory purposes. I had a right to make that assumption, and it was the business of the State to see that it was of the very best kind of construction. Now I have got this building on my hands. What am I going to do about it?" And then the answer of the State Industrial Commission is not quite so easy. I agree with much that Mr. Heckman said. I would not want to discuss the paper without a study of it, but then above everything stands out just that one proposition. I know that certain well-established industries erect buildings and occupy them for years, and I know of other industries that occupy them for month only, and they are not few. They may be few by comparison, but they are not few, and they present problems that the State Industrial Commission must take into account. We have them every day, every Wednesday, in New York, when they are considering the variation calendar, trying to accommodate some building to some industry, sometimes trying to accommodate a building erected for a particular purpose and afterwards turned into a tenement factory. It is something that should be taken into consideration.

MR. GERNON: I listened with much interest to Mr. Heckman's paper, and I agree with a great deal of it. But I would like to ask if they gave any consideration to the tenant factory building. I am not speaking now of the building that might change because of the fact that the building was completely emptied and another tenant moved in with a different class of manufacture, but of our ever-changing tenant factory building that we have in this State to a large number, where one floor moves out this week and another floor next week. It seems to me that a building of that class should be of rather a high type of construction, and I would like to ask Mr. Heckman if they gave that any consideration.

MR. HECKMAN: I agree with Mr. Gernon that a building to be used as a tenant factory should be of a very high type. I understand this proposal refers to buildings to be constructed in the future. It would seem to me that a landlord or an architect erecting a building which they knew was to be occupied as a tenant factory would necessarily so build it that any kind of a tenant could go in, and therefore would build it to meet the highest requirements. In regard to Mr. Lynch's remarks, I realize fully the seriousness of the situation. It should be recognized that in all buildings there should be specific features in them to meet the particular industry which occupies them. That any new industry that is of a different nature must usually make some alterations in the building to meet its particular requirements, and among those alterations would necessarily be the importance in regard to fire hazard if the law so requires it.

COMMISSIONER LYNCH: But is it always possible to obtain those things after the building is erected? It would mean in many instances that the building would be practically worthless after the first tenant had vacated. Another proposition is the isolation of all the buildings built in the country that do not need to be of so high a type of construction as the building in the city where the abutting fire hazards are greater, and yet we find in the country that while abutting hazards are not there, the fire protection is not there. That the fire protection of the city is lacking in the country factory, and that therefore one counterbalances the other. It is when we consider the question of lowering the standard of construction as set in the law for buildings, the plea may be made as Mr. Heckman makes it, in connection with the industry if it was to remain stable and all that, but with the changing industry, with the number of other questions that must be taken into consideration by the enforcing authorities, a number of difficulties are presented and a number of problems that are very difficult to overcome. And for that reason I say I still regret that we did not have an opportunity to study Mr. Heckman's paper in order that we might discuss it from all points of view and from our knowledge of the actual obstacles in connection with the enforcement of the law. There is the other proposition in the working out of a satisfactory, reasonable and sensible building code for the State Labor Department as applied to factory buildings and mercantile establishments in connection with the influence that that law has on the erection of buildings in the State to be used for other purposes. We all realize, I think, that that is a problem which should be worked out and met, but it requires some great holocaust, some tremendous loss of life in office buildings, in hotels, in tenement houses to draw the attention of the people to that phase of construction work in the State, but nevertheless the factory law has had a great influence on the erection of new buildings for those purposes, so that the question of lowering the standards is a serious one, not only for the factory owner but for the general building ideals of the State as a whole.

MR. GERNON: There is a feature of Mr. Heckman's paper I would like to hear discussed by those who are conducting the factories of the State and that is the question of the wooden floor. I do not think a wooden floor adds great hazards in certain types of buildings. Anybody who has had any experience in working on a cement floor and wood floor know what I am speaking of. No cement is as efficient as a wooden floor. There is more life to a wood floor than there is to any other kind of a floor. I believe that if it were possible to study the effects of a cement floor on an employee as against his efficiency on a wood floor we would wake up to something. Now there is also the dust problem on the cement floor which is greater than on a wood floor in certain classes of business. But any one who has had to stand right there all day on a cement floor, or move around on a cement floor in their mechanical operations, and on a wooden floor, know that there is something to that proposition, and if we had a real study of it it would be very valuable, and I think some of the cement floors would be covered with wood for the sake of the efficiency of the worker.

Mr. Haustein: The American Lithographic Company's floors are covered with an asphalt at the present time (known as Neuchatel asphalt), and they believe wooden floors to be better owing to our experience with them at our Brooklyn, Bush Terminal plant. Continual use of oil throughout the plant softens the asphalt and causes ruts from wheels of trucks which makes heavy trucking hazardous. We also find that asphalt of a soft nature is dangerous where nails are used in abundance; they are allowed to scatter about the floor causing the heads to be embedded in the asphalt when stepped on, leaving the point erect to penetrate the foot of the next passer-by. A great many accidents in our plant were caused this way. After experience in our Brooklyn pressrooms, we believe a maple wood floor is the only serviceable floor for manufacturing purposes as carried on in the printing industry.

Mr. Heckman: I just want to say that my company has been building factory buildings for a great many years, and we have hunted high and low and industriously for a substitute for wooden floors and we have not found it. If someone here can suggest a good one I would like to know it.

Mr. Tansley, William A. Rogers Company: In regard to nails becoming imbedded in asphalt floors, I might say that where there is any trucking they will also imbed themselves in hard maple floor. I seldom go through the shipping room of our factory but what in some place or other I find a nail hid in the floor and the point just in the right position to enter some fellow's shoe, provided he should hit it right. The time is coming, I believe, when the hard maple floor or other hard material is going to be prohibitive; the cost is going to be such as to be prohibitive. And the cement floor, I agree with the gentleman on the right, I do not believe it is as comfortable for the employees, and again it is just as comfortable as the wood floor when the wood floor has been worn to a certain extent. There are not very many manufacturers who desire to remove the top surface of their floors when it is only about 25 per cent worn out. They feel that they should get service from that floor still. Any man who has operated a machine on a floor and it has been worn about that machine, knows that the heel of the shoe will wear the floor more than the other part of the foot, consequently he has not got a level floor to stand on and it becomes very tiresome and it puts the employee in a very hard position to stand all day at that machine and not have a proper footing. I believe in this case a cement floor is ahead of the wood floor, because it will not wear so rapidly. I think the question of floors is a problem that is worthy of discussion at this meeting.

Mr. G. S. Williamson, New York World: About eight years ago we reconstructed our building. On the thirteenth floor we laid a wooden floor on a mastic base, laying the concrete first and then a tongued and grooved, small pieces, of wooden floor. That floor has been repaired once in eight years. Our service is very heavy. Our trucks carry numerous forms which are made up, and which are very heavy, and they operate very rapidly. We tried steel floors in that room in the old building, and concrete and brick. Our best result has been from the use of this wooden floor. In our press room we have all steel floor of quarter-inch plate. On the mail room floor and editorial room floor we have concrete, which we keep painted to keep the dust down. The concrete floors have not been repaired at any time in the past eight years. The wooden floor has been repaired once, about three years ago.

MR. THOMPSON, Solvay Company: I have this to offer. For the past two or three years we have tried laying an asphalt brick, such as is used for street pavements. That is laid in a bed of sand above a concrete base. Recently we erected a new building in which the entire floor will be used for machine shop purposes. That is being laid in asphalt brick. The men who are at work on this asphalt pavement, which we have laid in front of various tools and various places in the shops to try it out, have all approved of that floor, that is, the men themselves who are working on the floor have felt well satisfied with that as compared with cement or other hard surface floors. It is suggested and it may be of value to someone who is trying it out. We used the asphalt brick, such as are used on Broadway, New York, and other good pavements. It is laid on concrete base with sand in between the concrete and the brick, forming, I believe a better floor than the wood block, as used to a large extent in machine shops. The Navy Department is investigating that floor now, and they are going to try out our experiment in that respect. I believe one or two other companies in the country have also worked on that line.

MR. HECKMAN: Along the line of safety from fire hazard, I would like to inquire as to whether any tests have been made as to the combustibility of that floor.

MR. THOMPSON: Only this way, we were trying out some fire extinguishers and we built a fire on the floor. One of the companies had been experimenting with extinguishers, and we built a fire on the floor for them of paper and kindlings and there is nothing to indicate the floor would readily burn. There may be a question of whether it would burn, but an ordinary fire built of paper and kindling and so on was not effective.

MR. FORSTER, Independence Inspection Bureau: I have made notes of two or three points I would like to talk on. The question of the tenement building came up. It is quite obvious if you have a tenement building with a mixed occupancy, according to this classification, that you will undoubtedly have to penalize that building for the worst occupancy, just as in fire insurance to-day. The dangerous business penalizes all the other businesses in the building, and the tenants then will use their influence to keep the more dangerous industries out. It will automatically take care of itself, and result in the more hazardous businesses seeking a building in which they may group themselves. I think one point has been brought out by several speakers, including Commissioner Lynch, as to the difficulty of keeping them from moving into a building intended for a different occupancy. I can see if you have a certain building used for light manufacturing, you cannot put a heavy manufacturing business into it, if the floors won't stand it, or support the load, and I should imagine that there would be placed under this scheme of procedure a printed notice stating for what classifications that building might be used, just as it is now a common practice to state how much floor load a building is allowed safely to carry. In connection with this monumental business of working thirty-four pages of classification into these three or five groups of fire hazards, I would say that the list of industries on which that is based was taken from the very excellent classification which the National Board of Fire Underwriters has made. That is practically the United States standard, and I think every industry in New York State will be found there. But that list does not include the storage and mercantile buildings. That list only includes factories, which I take it is the field to which the Industrial Commission is now limited. But it could be extended to cover everything.

MR. BURKE: Referring briefly to floors, it seems to me it is an utter impossibility for us to lay down a standard, a floor that would suit all factories. Now you all know a wooden floor or a cement floor is not very satisfactory to a man with a canning factory. We find for the ordinary factory floor that wood is the best, from the point of view of cleanliness and likewise for the employees. On a concrete floor, experience has demonstrated that the employee required to stand upon it all day will tire out quicker than he will on a wooden floor. Not only that, but you will find that the employee subsequently will be attacked with a certain ailment, and therefore we discourage as much as possible the concrete floor in our factories, particularly where the employees are obliged to sit or stand at work all day.

MR. LANGDON: We have both the wood floor and the concrete floor in our plant and they are neither of them satisfactory. Perhaps one reason why the wood floor is not satisfactory is because in laying the floor time was not given to the sleepers to dry out before the maple floor was put on. The consequence is that the moisture that was in the sleepers has caused them to decay. That makes the nails let go and the floor comes up. It is not because the floor is worn out. It is because the sleepers have no holding strength. In the cement floor we find that the joints are gradually abraded by the truck wheels and I do not know of any way to make a joint that would be proof from abrasion from the hard truck wheels. We also have some truck wheels that are made of felt, a kind of compressed felt that was very satisfactory in going over cement and wood floor, but when they are heavily loaded they push very hard. They are like a rubber tire, they sink down and spread out and the load is not moved very easily. I think this floor proposition is a very severe one, or serious one. We have got to take it into consideration in all buildings in the future. If the sleepers were preserved by some preservative they would not rot and of course the floor would last that much longer, and the flooring must be very narrow in order to maintain its strength, and be properly nailed and well dried out before it is laid.

MR. SWEET: Relative to the question of floors, I know of a new article, not as a whole floor, but as a covering that is in trial at the present time in Rochester. There is a piece of it down in one of the factories, purposely to determine its resistance to truck wheels, where it gets hundrds of loads on it each day from a small factory truck. So far it has shown no signs of wear, and it has been down several weeks. It is intended originally for house floors, where you want a continuous floor without joints. You can make your floor and the base in one piece so that there is absolutely no corners for dust or dirt, and it can be cleaned with perfect ease. But the people who are interested in it, trying to advance it, have taken this other method of proving, if possible, its superiority over the wooden floor in factories, and have put down this sample for trial. It has some resilience and is not like a concrete floor. Consequently people do not tire as bad as they would on the other kind of floor. I should be glad to keep the Commission informed of the outcome of this piece, and then any one who desires can write to the Commission of this State and get the information. As soon as it has been proven what its best qualities are we shall be glad to notify you of the result.

Mr. Heckman: I ask the gentleman as to the combustibility of that floor. We have examined a good many floors that are pretty good from the wear point of view and the resilient point of view, but they were made up of things like linoleum and for that reason did not feel they were advisable to use in factories.

Mr. Sweet: I know that one of the boys told me he could not cut it with gasolene after it was down, and it is not apt to burn if gasolene would not affect it.

Mr. ——: May I ask the gentleman what weight loads he intends to drag over this particular type of floor?

Mr. Sweet: I cannot give you the weight, except it is a four-wheel truck, in which you could carry anywhere from a quarter to a ton. About what one man can readily wheel on a four-wheel truck.

Representative of Morrow Manufacturing Company: Our manufacturing company has a branch plant at Toledo, Ohio, and I think we have had about as much experience in the floor line as the ordinary plants, and I wish to explain the construction of the floor in the Willys-Overland plant. The first operation is to take cinders and mix with concrete and gravel and place it on a floor as a base. After that the planks, which are two inches thick by eight inches wide, are placed next to the concrete and cinders, and after that we place the hardwood maple flooring which is matched. We have found that more satisfactory than any other floor we have used. At one department we found it absolutely necessary to remove the concrete floor on account of the complaints of the employees. So that is our experience. Maybe some of the other plants would find it better to have concrete. In one department, the sand-blasting department, we found it necessary to place the marbleoid, the same as in this church building, and we find that is very satisfactory for the sand-blast department.

Mr. Gernon: There is no question but that in certain classes of business a concrete floor is almost necessary. In some businesses a wood floor would not stand any length of time. What I have in mind is the numerous complaints we receive from manufacturers and those conducting business in places like New York city, where a great horde of people have moved from the low type of building to the new construction. In the old building they had the wood floor. In the new building they are all of cement. There is more hazard on a cement floor than on a wood floor, more slipping, so that there are numerous complaints. Women particularly find fault with the cement floor. Therefore it seems to me it would be a field for some study and some thought. Now there are instances where they have overcome the question of getting away from the tire of the cement floor, by inserting in some places a wood floor in front of a machine where the operator stands and on a level with the cement floor. That is, in making the cement floor they make a recess in front of the machine and insert an inch and a quarter plank. That aids the operator considerably for you have only to try it, and there is no use of my saying that to a practical man. No man will stand as long and work as well on a cement floor as he will on a wood floor.

Mr. Hoskins: I have been working around buildings for forty-five to fifty years, and my experience has been that the concrete floor is very bad for people to walk on. The wooden floors are the best. I do not say this because I am a carpenter, but it has been my experience.

Mr. Meacham: We introduced our first wood block floor in our plant about a year and a half ago. We are putting in a second wood block floor at the present time. Our method of laying that floor is as follows: The block is hexagonal in shape, 2½ inches thick, and treated with a sort of carbolineum treatment. We put down about five inches of gravel concrete, fairly smooth. When that is set we place on it half an inch of a one to three dry sand and cement mixture, which is finished off very smooth. Ahead of the man who lays the blocks is a man who goes over with a dry mix, and a sprinkling can and wets it. On that the block is laid and allowed to lay there until that dry mix is thoroughly set. Sand is then placed over the top of the blocks and swept in between the blocks to a depth of about one-half to three-quarters of the thickness of the block, and on top of that sand and on the top of the block is placed a pitch furnished by the manufacturer of the block. That is placed on there hot and swept over all of the interstices between the blocks. That makes a pretty satisfactory floor. The men are loud in praise of the floor. The machinist is not in danger of injuring tools that might drop, as in the case of a concrete floor. We found it worked out very satisfactorily. We had one peculiar experience in the new building this summer, that seems to have been a novel one to the manufacturer of the block. We had a system of underground or underfloor heating ducts. The floor immediately over these heat ducts became warm and heaved the floor. But we have taken care of that by the introduction of more expansion strips. By the way, we placed those expansion strips all around the inside of the building next to the foundation wall, to take up any come and go that may be due to heat and cold. We are very much pleased indeed with that floor, as we have tried it out. It is an easy floor to truck over if it is well laid, and it gives very good satisfaction.

Mr. Tansley: I would like to ask the gentleman if they found any tendency of the pitch or the material with which these blocks are impermeated to soften up and come to the surface from those heating ducts.

Mr. Meacham: The pitch over the hot duct did not seem to come to the surface as much as it did to go under the block. There was not sufficient room for expansion, consequently the pitch went down under the block. But we overcame that difficulty and there is no more trouble.

MR. FORSTER: I would like to bring before the Industrial Commission the question of whether or not it is not only feasible but desirable to make use of any such tabulation as that which with changes might be adopted as applied to existing as well as to future buildings. As I have viewed the labor department, I have always been impressed with the fact that many of the desirable things applied to the future. While it is obviously not feasible or desirable to ask whether the construction of buildings shall now be changed, it seems with such a measuring stick which takes into account the mill-construction and the fireproof building, we should take care of everything that we can find in the way of structures in the State of New York, and that a graded occupancy arrangement of that type ought to be applied to the existing as well as to the future building. I have raised the point because Mr. Heckman suggested in his discussion that that was intended to apply to future buildings.

WEDNESDAY AFTERNOON, DECEMBER 13

PRESIDING OFFICER: EDWARD P. LYON, NEW YORK INDUSTRIAL COMMISSION

COMMISSIONER LYON: We have gone far enough in our papers and discussions to have some facts borne in upon us with tremendous force. It is an awful thing to contemplate the amount of economic loss to which a single State is subject by reason of accidents in its industries. It is a far more pitiable thing to contemplate the amount of physical and mental suffering which that loss entails upon injured workmen and their families, an aggregate of suffering which no human plummet can fathom. I think you will agree with me that we have done the first thing necessary when we have come to appreciate what the great problem before us is. And no one who has attended with any regularity the meetings of this Congress can fail to appreciate the size and gravity of the problem which we are trying to solve. But there are very hopeful features connected with this serious situation, and one of the hopeful things is that a very considerable part of it can be eliminated. And the other still more hopeful thing is that there is manifested a disposition by employers and superintendents and foremen and industrial engineers to co-operate with the laboring man and the labor leader and the officials of the State of New York, to take advantage of the possibilities of minimizing these accidents and translate them into an actuality. I think every member of the Commission has been more than pleased with the prospect of that close co-operation between all parties affected by this situation. There are, however, some difficulties which confront us and always will. This call from the laboring man for relief from his sufferings appeals to the humanity of the employer. We have an appeal also, an economic appeal, which very fairly supplements the appeal of humanity, because since compensation has come to the injured workman, if it is worked out to its final analysis no man can put into his factory those appliances which economize the loss of life and limb without sooner or later having it reflected in the premium which he pays for compensation insurance. And most employers will respond not merely to the latter suggestion, but more especially to the humanitarian suggestion, because, after all, all men working in industry, whether they be workmen or superintendents or employers, have fine feelings and look with appallment upon this aggregate of suffering. And yet you employers who are so ready and so willing to strike hands with officials and workmen to economize the suffering by putting into your factories those things which make for safety have got to realize that not all employers are actuated by those motives, and there still is left, and will be left a certain residuum of employers who will have to be compelled to obey the laws making for safety in industry. I am optimistic enough to believe that the compulsory guarding of machinery in factories will continue to grow less and less as this problem is understood and discussed, and yet there will always be the necessity of making some men do the thing which is obviously a necessity in order to accomplish the object which we have in view. And I refer now to the necessity which the Commission is under and will be under to institute prosecutions against employers who do not obey the letter and the spirit of the law relative to the hazards in factories to their employees. I am told that since the 1st of July, for the five months from July to December, the Commission has been compelled to bring between sixteen and seventeen hundred employers into court in order to compel them to comply with the very sane features for the most part of the Labor Law, not only, it is true, those relative to accidents, but to hours of labor, employment of children, employment of women, etc. But at least twelve hundred of those sixteen hundred cases had reference to the things which make for safety in factories. In the City of New York we are bringing into court every week more than two hundred people who are violating the factory laws. We are told by the court that the purpose of these prosecutions ought to be, and in fact of course it is, not to punish people for the sake of punishment, but to induce by compulsion if need be, employers to comply with these rules which make life in factories safer. Still the courts are, in New York at least, largely crowded with these cases that have to be brought in order not only that the law may be complied with, but to make an example in order that others will comply with the law. Now there are two things that are necessary in order to have this law obeyed from the standpoint of court prosecution. One is that we must have the magistrates who try these cases somehow or other impressed with the idea that the thing is important, and we must have magistrates who are in sympathy with the enforcement of these labor laws, and we must have juries who sit with the magistrates who are willing to see these laws enforced. Now in some parts of the State we are not fortunate in getting the co-operation from these two sources we ought to have. We brought to trial only a few weeks ago an employer for violating the Labor Law, and the case when it was presented was absolutely a proof of violation of the Labor Law. There was no dispute of the testimony at all. The magistrate, as he apparently has the right to do, did as other magistrates do; he left the consideration of the case both as to its facts and to the law to the jury. The jury retired and in five minutes came back with a verdict of acquittal, and one of the jurymen came to our counsel after it was over and said this: "Well, counsel, you tried the case all right. Nobody could have done better. But you cannot enforce this law up here. We don't believe in it." Now, gentlemen, I have told you that for this sole purpose, that you cannot, taking it at large, enforce in the State of New York laws which public opinion doesn't support. And one of the tasks which is before industry in the State of New York is to cultivate a healthy public opinion that will stand back of the thing that you and the Commission see so clearly ought to be done. It ought not to be possible for any man to come into court with a practical confession that he has violated the law and have a jury bring in a verdict of not guilty. Sometime ago a man was before us, speaking about the enforcement of the Labor Law, and he said that he had tried his cases on all theories that he could think of. He would set up in one case one defense, and in another case another defense. Speaking about one neighborhood in which he had to try his cases, he made this significant statement: "It doesn't make any difference what kind of a defense I put up in that neighborhood, I win every time." Now you see there is a public sentiment that must stand back of these laws and their enforcement if we are going to get the few, because they are relatively few, recalcitrant employers to do the thing that you employers are not only willing but anxious to do in order to safeguard life and limb in your factories. The topic for the afternoon discussion is "Occupancy and its relation to exit facilities from the viewpoint of life hazard." The first speaker is Mr. H. W. Forster, Chairman, Committee on Life Hazard, National Fire Protection Association, and General Manager of the Independence Inspection Bureau of Philadelphia. I have great pleasure in presenting Mr. Forster.

OCCUPANCY AND ITS RELATION TO EXIT FACILITIES FROM THE VIEWPOINT OF LIFE HAZARD

By H. W. FORSTER, CHAIRMAN, COMMITTEE ON SAFETY TO LIFE, NATIONAL FIRE PROTECTION ASSOCIATION

The topic that I am assigned this afternoon is one that is very near and dear to me. This morning, Mr. Heckman, in his admirable presentation of the subject of safety to life said there were three factors which entered into this question of life safety of buildings in so far as fire is concerned; viz., the building and its protection, the occupancy that is carried on in that building, and the exit facilities. He referred to occupancy as it relates to building construction and protection, and he presented a chart setting forth his specific suggestions. It is my pleasant duty to discuss exit facilities as they relate to occupancy. I believe that the subject of my address limits me a little and I have selected the broader title, which takes into account construction and protection and occupancy as they relate to exits.

Before taking up the specific part of my talk, I want to give you just perhaps a brief background for this discussion. In the first place it is only recently that we have had anything resembling laws bearing on safety to life from fire. The first thing that showed its head above the horizon was the old-fashioned outside fire-escape, which generally was required in a sort of a blank manner, irrespective of building construction or number of persons employed therein, or exit facilities or anything else. Then we began to get rules on building construction, and we have rules of that kind in our New York State factory code, and here in New York State, following the Triangle disaster, we proceeded to get busy and study the exit problem with something resembling intelligent consideration of some of the more important factors. And it is my pleasure, Mr. Chairman, to stand before you to-day and tell this audience what it perhaps already knows, that New York State set the style along those lines, and Mr. Porter, who is to follow me this afternoon, was very actively identified with bringing about those markedly improved conditions as compared with the days gone by.

I think the essential points of the law in regard to exit facilities are as follows: First of all there shall be two ways out of every floor above the second floor, and the exits shall be as remote from each other as possible. The next point is that the measure of stairways shall be units of eighteen inches in old buildings and twenty-two inches in new buildings. Twenty-two inches is ideal, because this gives a stair so wide that two persons can pass down readily, and three cannot very easily, if at all, block such a stair. But since in the old buildings thirty-six inch stairs were almost universally standard, we had to make the concession when this rule went into effect and permit that. The distance from any one point to the nearest exit is placed at 100 feet, and the idea of this is that you have got to travel but a very few steps to the exits. The horizontal exit comes in for a liberal, I think a too liberal, allowance in the way of occupancy. Now the Commission has made a credit of at least 50 per cent, and sometimes higher, I understand, for sprinkler systems. All of this indicates that the State authorities realize the relative idea that you cannot have necessarily the same rule in every case. It might be mentioned also that the Commission has some discretionary power about allowing more than fourteen persons to an ordinary stairway. The seed of relatively "fitting the punishment to the crime," has already not only been sown in New York State, but has borne some fruit.

I am representing here to-day the National Fire Protection Association Committee on Safety to Life, and we have a scheme that we think is very desirable and will prove practical. We recommend that the occupancy be based on construction of the building, on whether or not there are sprinklers, on the protection of vertical openings, upon the height of building, and also upon the inflammability of the enterprise carried on therein. We think it is proper to do this because what we propose is deemed by two or three dozen oompetent engineers to be safe practice, although it is unusual practice. We also believe it is desirable because having a graded scheme of this kind will encourage not only the best type of construction in future buildings, which is desirable, but it will encourage the owners of tenants on long term leases of existing buildings to do everything within reason to make them safe. Surely the whole attitude of this sort of legislation should be, and largely is, encouragement to do the right thing rather than the use of the legal club to which Commissioner Lyon referred in his opening remarks. Now the authorities that have enforcement of rules and regulations of this kind have a very difficult position to fill. Every man is trying to get exceptions for his particular conditions which he thinks are different from somebody else, or better than somebody's else. Every man is perhaps exaggerating, but there is a great deal of that sort of thing going on. It is our belief that if the requirements of the State of New York along the lines of exits could be put into a chart form of the kind that you have in your seats, and to which I will refer specifically, it would be a tremendous help, because everybody would know just where he stood, and the men responsible, the State authorities, would have a measuring stick in their hands. The man who was designing the building would know what he could put there in the way of building. The man who was looking for new quarters could size them up from the standpoint of whether of not there would be enough room in that building to take care of the number of people that he has in his organization. We think it would be very desirable to have such a concrete scheme of procedure.

Now objection has been made to putting into a building more people than the stairs and the stair enclosures, or the opposite side of a horizontal division wall, will house. In other words, it has been claimed that life is so precious that we must not take any chances at all. Of course life is the most precious thing that we study and work with in a field of this kind. But I call attention to the fact that at this very moment in the State of New York we have already gone beyond the theoretical or actual capacity limit of stairs and other vertical enclosures. It is also true that the sprinkler addition of 50 per cent increases what has been allowed for other reasons in the way of what might be termed overloading of exits. It seems to me that we have simply got to face courageously the fact that we have got to put more people on the floors of our better factories than can at the first signal of fire pass into the exits and stay there without moving. The New York State schedule of exit capacity, if you may call it that, figures that there will be one person on every other step from floor to floor, that there will be persons on the landing or in the halls, and the figure fourteen was arrived at after some debate and trading as being a proper unit of measure for the number of persons allowed per floor for each unit of stair width of eighteen inches, or twenty-two inches as the case might be. Now it has been claimed that if you put more people upon a floor than the exits will hold without the people moving out of the building, that your "goose is cooked." That you cannot get the people out in case of fire. The "proof of the pudding," I think, "is in the eating," because I have witnessed a fire drill where one or two thousand persons came down a single stairway within a comparatively short time. I think all of you have marvelled at the speed that employees, without panic or interference with each other, could dash down the stairs when the whistle blew. There is not a schoolhouse in America I think that would meet the exit requirements of the New York Code in the strictest application of it, and I think the discussion will bring out the point, first of all, that we have conditions in the better buildings that are not very conducive to fire; secondly, that people do display some sense. I think we are warranted in putting more people on a floor than the stairs and the enclosures will hold. We state that plainly, with due regard that life is a very precious thing, and it should not be jeopardized unduly. I do not think I exaggerate when I say that hundreds and thousands of men and women are employed to-day in buildings which are far below the standards which have now been set. We have got to take chances, based upon the very best experience and best judgment. If you will be good enough to refer to the printed code you have in your seats, you will find the whole story in a nutshell. If you will be good enough to run through the thing with me, I will read it. This is an extract from the report of the Safety to Life Committee of the National Fire Protective Association. That is where this table comes from.*

Proposed capacity in number of persons per unit of stair width and it is specified to be eighteen inches in old buildings and twenty-two inches in new buildings, as measured between handrails. Based on emptying time, and on construction, sprinkler protection, protection of vertical openings, height, and character of materials stored, manufactured or used. If you will look across the top of the sheet you will find column headings. First: Type of construction, divided into combustible and incombustible, fireproof or non-fireproof. The second column refers to sprinklers. The third column divides up again into required exits, enclosed or protected. Then we take up the story height of the building, beginning with the two-story building and carrying this tabulation up to and including the seven-story building, and there is no reason why you cannot carry it higher of you choose. Then we have three degrees of inflammability. The idea is that the classification of inflammability, which Mr. Heckman submitted this morning by title, should apply to this tabulation, high inflammability, moderate inflammability, and low inflammability. Now under each of these inflammability groups you will find two columns, the emptying time in seconds, and the persons per floor. Now let us take the very first line, and under column five, high inflammability. There are fifteen persons allowed per floor per unit of stairway, and the emptying time, assuming that those persons can travel past a given point at the rate of one per second, and that is substantiated by tests, would be fifteen seconds, except that to all of these figures you have to add about half a minute to take care of the persons reaching the stairs. If the building is three stories and there are fifteen people on the second and third floor the time will be thirty seconds. A four-story building it will be forty-five seconds. And, generally speaking, any of the persons-per-floor figures will have opposite them an emptying time which is as many times the persons per floor as there are stories above the second. The thing is rather complicated and difficult to explain, but I hope you have got the idea. The table is of course purely arbitrary. It is based upon work which was first done by the Associated Manufacturers and Merchants in New York State. Then the Committee on Safety to Life took this table in hand and studied it over and made some modification. But the whole thing is based upon the assumption that you must be able to empty a building in not to exceed a given time. For example, take the column five at the bottom. The maximum emptying time which we permit for a high inflammability, even of the best type of construction, is 180 seconds, or three minutes. Taking the bottom of column six you will find the emptying time is four minutes. The same under the best conditions five minutes. If you study that table you will find that for anything resembling poor construction, poor protection and high inflammability, the emptying time requirements are very, very low. In other words, the degree of protection afforded should be very high. Now I do not think if any of you present were on the sixth floor of a reinforced machine shop with sprinkler protection you would be worried if you had to wait four or five minutes to get out of the building. No building of that kind was ever destroyed. Life jeopardy is very slight indeed. Now I would like to take up next, if I may, briefly, the factors which enter into this table. First of all, construction. Mr. Heckman pointed out this morning that the contents of the building were far more important from a life safety standpoint than the character of construction, and that is correct. But the better the construction the greater the life safety. There is no doubt about that. It is particularly true in the high building where people have greater fear perhaps, and where the resistance of the floors and the stairs and elevator enclosures to fire become more of a factor than with the low building having combustible stairs. A fireproof building generally lends itself better to good housekeeping. It is an inducement to keep a building in better shape than the old fire-trap construction. I think there is no doubt that the value of fireproof construction is considerable. Now these figures have been analyzed and we find that on an average, taking into account all of the conditions set forth here, the fireproof building is given an allowance of 52 per cent more occupancy than the combustible building. That is the grand average. Now the next question is that of an automatic sprinkler protection. The Workman's Compensation Service Bureau of which Mr. Cannon spoke, takes into account sprinklers as a valuable factor in reducing life loss possibilities. Massachusetts and Pennsylvania rating schedules also recognize the sprinkler. The Safety to Life Committee of the National Fire Protection Association, after very carefully investigating the life-loss record in sprinklered buildings, admittedly not being able to get all the data there was, but going back thirty years, and having as members 250 or 300 of the ablest insurance engineers, reported that under ordinary conditions where there were inflammable contents, the automatic sprinkler affords the greatest degree of safety. That is the official evidence of that great association. The argument has not infrequently been made that the sprinkler is a property-saver and not a life-saver, and I have never been able to understand how you could save property without thereby safeguarding life. The facts are that sprinklers have been put primarily into the most hazardous buildings because the greater the fire risks the higher the insurance rate, and the inducements to put in sprinklers are the greatest there. And the life loss which I have before me indicates that up to date we have been able to find thirty-one instances of life being lost in sprinklered buildings. In one case a linseed oil factory contained 100,000 gallons of gasolene and an explosion took place, wrecking the building and killing five men. In another case, fire in a celluloid factory caused the loss of five people. But, generally, where life has been lost in sprinklered buildings no form of construction, no liberality of exits and no form of fire protection, at least known to me, would have availed.

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* See reproduction of table on page 151.

The record of the sprinkler, which admittedly is not complete, proves that it is a splendid thing and one which is surely as reliable, based upon the records, as is the human factor. Between 4 and 5 per cent of all the sprinklered fires, and we have recorded 15,000 or more, were unsatisfactory. That means that something did not work according to the theoretical expectation. It does not mean that the building burned down in each case, and as far as I know a failure of a sprinkler system has never resulted in loss of life. Perhaps that is a fortunate combination of circumstances, but there is nothing in the records to indicate that there has been a disaster in a sprinklered building of the kind that has galvanized into life fire protection in the State of New York. The average credit allowed for automatic sprinklered protection is 65 per cent in this table.

The next item on the list is the one of vertical openings. It is my honest opinion that the greatest degree of comfort that would be insured me if I were in the top of a building on fire would be to know that every hole was protected, and I think I express the sentiments of those who have thought about this thing when I say that protecting all the vertical openings is an additional step forward and ought to be encouraged, and that this table, which makes a credit for this condition of 21 per cent at least indicates what should be the proper treatment of this subject.

The next item, the one of height, I have referred to. I told you why we stopped at seven stories, and that the emptying times, the maximums, were three, four, and five minutes.

The relative combustibility matter I will only refer to by saying that Mr. Heckman's scheme is one that could be used.. According to this table, you may add 50 per cent more people if you have a moderate inflammability, and 118 per cent more if you have got a practically incombustible situation.

Now the question of how this tabulation will hook up with New York State requirements for horizontal exists is worthy of treatment. The law permits you to put people on the opposite side of the fire-wall at the rate of one person to each five square feet of floor space not occupied by benches, machinery and other equipment, and the law furthermore says that the horizontal sections on each side of this division must have at least one approved stairway. Now I have figured out to my own satisfaction and to the satisfaction of the Committee on Safety to Life that that is a pernicious ruling under the worst conditions. It is possible to put in a building, poorly built, of inflammable occupancy and with open stairs on both sides, so many people that should fire on one side drive all of them to the other side, the overloading would not only be tremendous, but should a single fire-door be left open, blocked open, or a single hole for a shaft permit fire to spread through, the persons on the opposite side would be jeopardized. The Committee on Safety to Life, after a very careful consideration, adopted as a committee suggestion the following language about horizontal exits: "If a horizontal exit is provided, the number of occupants may be increased 100 per cent of the normal capacity of a room, provided this increase does not exceed the total number of occupants originally provided in that exit room."

The ruling which I think is being enforced that two stairs shall be the minimum and that if you have more than 5,000 square feet there shall be added additional stair or other exit for each 5,000 square feet, means what? That means, if you have, let us say, a factory with few people on a floor, 250 feet long and 50 feet wide, having 12,500 square feet of floor space, you would have to have four stairs, and at another point in the law it says that no person on a floor at any point shall be over 150 feet from an exit in a sprinklered building. But although you may have very few people, not overloading the stairs at all, you have got to put two additional stairs into that building, and it seems to me that is superfluous. There are two ways out a reasonable distance apart, and if you have not more people than those exits will properly take care of, then why the requirement for additional stairs in every case? I may be wrong in assuming that that is generally being required, but that is in the law, and I want to bring it before this house for discussion.

One further suggestion, as regards this occupancy chart. We think it is only fair to have people distributed without absolute uniformity. It should be permissible to distribute between any three adjacent floors the total number of persons that those three floors will hold under the schedule, and provided that no floor will have more than 100 per cent overload. That ruling, if it were made general, and it may already have been followed in some cases, would give a good deal of relief in some instances.

Now, Mr Chairman, that is the "meat of the cocoanut". That brings this table to you, not for a moment thinking that it is mathematically correct, but we plead that the State authorities take into account the principle for which it stands, namely, the exit requirements with due regard to the construction and protection of the building and to the business that is carried on therein. I thank you very much.

Extract from 1916 report, Committee on Safety to Life, National Fire Protection Association:

PROPOSED CAPACITY IN NUMBER OF PERSONS PER UNIT OF STAIR WIDTH

(UNIT WITH "18 IN EXISTING AND 22" IN NEW BUILDINGS AS MEASURED BETWEEN HANDRAILS).

Based on emptying time, and on construction sprinkler protection, protection of vertical openings, height, and character of materials stored, manufactured, or used.

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5		COLUMN 6		COLUMN 7		COLUMN 8
Type of construction	Automatic sprinkler protection	Protection of vertical openings	Story height of building	CHARACTER OF MATERIAL STORED, MANUFACTURED, OR USED						Line No.
				High inflammability		Moderate inflammability		Low inflammability		
				Emptying time in secs.	Persons per floor	Emptying time in secs.	Persons per floor	Emptying time in secs.	Persons per floor	
Combustible	No	Required exits enclosed or protected	2	15	15	25	25	40	40	1
			3	30	15	50	25	70	35	2
			4	45	15	60	20	90	30	3
			5	60	15	72	18	88	22	4
			6	75	15	75	15	90	18	5
			7	90	15	90	15	90	15	6
		All vertical openings enclosed	2	15	15	30	30	40	40	7
			3	30	15	60	30	80	40	8
			4	45	15	75	25	120	40	9
			5	60	15	88	22	120	30	10
			6	75	15	90	18	120	24	11
			7	90	15	90	15	120	20	12
	Yes	Required exits enclosed or protected	2	22	22	50	50	80	80	13
			3	44	22	100	50	140	70	14
			4	66	22	120	40	180	60	15
			5	88	22	148	36	180	45	16
			6	110	22	150	30	180	36	17
			7	132	22	150	25	180	30	18
		All vertical openings enclosed	2	22	22	60	60	80	80	19
			3	44	22	120	60	160	80	20
			4	66	22	150	50	240	80	21
			5	88	22	180	45	240	60	22
			6	110	22	180	36	240	48	23
			7	132	22	180	30	240	40	24
Incombustible	No	Required exits enclosed or protected	2	20	20	40	40	80	80	25
			3	40	20	80	40	160	80	26
			4	60	20	105	35	180	60	27
			5	72	18	120	30	180	45	28
			6	75	15	120	24	180	36	29
			7	90	15	120	20	180	30	30
		All vertical openings enclosed	2	25	25	50	50	100	100	31
			3	50	25	90	45	170	85	32
			4	75	25	120	40	210	70	33
			5	80	20	140	35	210	52	34
			6	100	20	150	30	210	42	35
			7	120	20	150	25	210	35	36
	Yes	Required exits enclosed or protected	2	30	30	60	60	125	125	37
			3	60	30	120	60	210	105	38
			4	90	30	150	50	240	80	39
			5	108	27	180	45	240	60	40
			6	110	22	200	40	240	48	41
			7	132	22	210	35	240	40	42
		All vertical openings enclosed	2	37	37	75	75	150	150	43
			3	74	37	150	75	250	125	44
			4	111	37	210	70	300	100	45
			5	120	30	240	60	300	75	46
			6	150	30	240	48	300	60	47
			7	180	30	240	40	300	50	48

NOTES.— Emptying time is based on possible speed of persons passed given point as front door of buildin
No allowance is made for time to reach stairs.
For buildings over seven stories high allowable number of persons per floor must be correspondingly reduced, except that the minimum number per unit of stair width shall be fifteen persons.

[Since the above tabulation was submitted, the Committee on Safety to life of the National Fire Protection Association has brought out a modified table, not, however, different in principle. This table may be found in the 1917 Proceedings of the Association which may be secured from the Secretary of the Association, 87 Milk Street, Boston, Massachusetts.]

COMMISSIONER LYON: There is no work which the Commission has to do which gives it more concern than the question of these fire exits, and the exercise of a measure of discretion which we have to give variations from the strict letter of the law in certain cases. This paper of Mr. Forster will be opened for discussion, but in order that the discussion may have as good effect as possible, it has seemed to us better before opening the matter for discussion to have the paper following, which has to do with the relative advantages of horizontal and vertical exits, which is to be presented by Mr. H. F. J. Porter, Consulting Industrial Engineer, a man who has given perhaps as much study to this subject as any other man. Before we open the matter for discussion we will have Mr. Porter's paper.

HORIZONTAL VERSUS VERTICAL EXITS

BY H. F. J. PORTER, M. E., CONSULTING INDUSTRIAL ENGINEER

In July, 1913, commenting editorially on the clothing factory fire at Binghamton, N. Y., the *Engineering News*, which is considered as probably the leading authority in technical journalism in this country, referred to a paper which had been presented at a recent meeting of the American Society of Mechanical Engineers saying "the author demonstrates conclusively that by no form of vertical fire-escape ever built or proposed, whether it be stairways inside or outside, ladders, or any other means, is it possible for the hundreds of people employed on the upper stories of a high loft building to reach the street in safety before a fire has spread fast enough to cause destruction."

It then refers to the fire-wall bisecting a building with horizontal exits through it on each floor "as the only constructive recommendation" which had been brought out as a result of the then recent Asch building fire and says "We wish to call especial attention to this recommendation which appears to be by far the most practicable and meritorious suggestion ever made for safeguarding the lives of employees in the upper stories of factory buildings" and again "This plan is applicable not solely to buildings used for manufacturing purposes. In department stores, for example which have long been realized to present the possibilities of a terrible holocaust, it transforms present dangerous conditions into comparative safety. Hospitals and asylums are another class of buildings in which this offers practically the only possible means of reasonable safety for the inmates."

The studies which were made by the engineers for the New York State Factory Investigating Commission which brought out this recommendation showed that an abnormal condition in building construction had come about by an endeavor on the part of property owners to obtain a large income from a small ground area by superimposing one factory upon another, ten, twenty and even thirty times repeated, each with its quota of a hundred or more occupants without increasing the number or size of the exits beyond what was necessary to empty the ground floor. "But" says the Engineering News "this bisecting fire-wall gives to every floor a horizontal exit such as the ground floor enjoys and thus makes every floor no matter how high practically as safe as the ground floor." In fact the number of exists had been based on floor area and the occupancy on the cubic space which the room contained for air for breathing, two characteristics which had no relation whatever to each other so far as safety in case of fire was concerned.

These studies showed that property interests had been considered at the expense of safety to human life and that as a result the buildings were unsafe for their occupants and that in case of fire there were only two alternatives for the latter, viz "to burn to death or to jump to death." These studies also brought out the facts that the principles on which these buildings were constructed and occupied were wrong, that exit capacity should be proportional to occupancy and that no more people should be allowed on any floor or in any building than could safely escape from it in an emergency within a reasonable time. This time was set at one minute to empty a floor and three minutes to empty a building.

There were proposed two ways of doing this, (1) by reducing the number of occupants to meet the capacity of the existing exit facilities and (2) by increasing the capacity of the exit facilities to accommodate the existing number of occupants, or by a combination of both ways.

Let us see in detail what the dangerous conditions were which the studies referred to disclosed and what recommendations were proposed to remedy them, and then let us see how the parties who were affected by these requirements modified them in their own interest to save expense and against the safety of the lives of the occupants.

Let us consider first the difference in exit facilities possessed by a one-story or ground floor factory building, with a doorway at each end, from those possessed by a multi-storied building of the usual type. Suppose in the first instance, a fire occurs, cutting off one of the two exits, the inmates say 100 in number on the ground floor, would have no difficulty in escaping through the remaining doorway and nothing would impede this horizontal escape except the size of the doorway. Now put another story on top of this one with say 100 people in it. The doorway at each end of this upper story will have to open onto a stairway leading down to the doorways constituting the exits from the factory below. If a fire should occur now in the same place as before, cutting off the same exit, the 100 people on the lower floor would immediately proceed to make their horizontal escape through the same doorway as before while the inmates of the upper floor would have to make a vertical escape downstairs to reach the same doorway. The result of course would be a collision, the stream of people from upstairs coming down upon the stream of people on the ground floor who would be making their way out of the building. This collision would tend to prevent both the upstairs stream from coming down and the ground floor stream from going out and there would therefore occur a jam at the exit, developing a panic which probably could not be cleared in time to prevent many injuries and possibly a large loss of life and if no other means of escape was afforded many people would be burned to death.

Not only have we placed one factory upon another, making a two-story building as above described but we have gone on piling factory upon factory until we have loft buildings ten, twenty, thirty and even more stories in height with from 100 to 300 and 400 people on each floor. If a two-story building with such an occupancy could not be emptied in an emergency, how much less emptiable would a ten, twenty or thirty storied building be with a similar occupancy. This is the abnormal situation which had developed gradually in the course of time and it is surprising that it had not been recognized before the occurrence of the Asch building fire made it evident.

Now there is a certain philosophy of procedure which has to be considered in order to understand the actions involved in the descent of a crowd on a stairway. In the first place it is necessary that a vacant step be reserved in front of a person for him to tread upon otherwise he cannot move. People in a crowd on a stairs under emergency conditions cannot control their movements sufficiently so that each person can have a vacant step preserved in front of him. In an emergency those who are above on the stairs crowd down those in front of them so as to fill all the vacant steps and thus prevent progress downward. Consequently a stairway is an exit facility only under normal conditions and then for only as many people as every other step will hold comfortably.

This limitation of the capacity of the stairway is now recognized as the dominating feature in determining the occupancy of the floor from which it leads. This occupancy must be able to reach and enter the stairs within such a reasonably short time as will preclude the possibility of the fire catching up with it. It should be able to do this in a minute.

Of course there are other conditions affecting every individual floor which should be considered also in determining its occupancy. There are however certain principles which should govern all cases alike and of those the requirement of maintaining the vacant steps on the stairs is fundamental and therefore the most important and should take precedence in all cases.

This limitation affects the number of people on a stairway taking into consideration its vertical dimension only. Regarding its transverse dimension twenty-two inches has been accepted as the proper width to allow for the average person, so that a stairway forty-four inches wide is the narrowest to allow two people abreast to go down comfortably.

The law in New York has adopted two standards for stair widths, one allowing one person to each eighteen inches and fraction thereof of width of stairs in old buildings and the other allowing one person to twenty-two inches of width in new buildings. This allows more people on the stairs and therefore a greater occupancy in old buildings which are inherently more dangerous on account of their inferior design and the character of their structure. This is an instance where the New York law is bad and ought to be changed. Of course the narrow stairs cannot be widened to accommodate the number of people but the number of people can be reduced to meet the limitations of the stairs and in this way the old buildings can be placed approximately on the same plane of safety as the new ones.

Although each floor presents conditions which determine its own occupancy, it has been found from experience in the building of many factories that certain features in their design have become standardized and among these are the story heights within which the stairs are constructed and also the size of the stair steps.

The average height of a story in a typical factory building is ten feet from floor to ceiling and the ceilings average one foot six inches in thickness.

This would give a height between floor levels of eleven feet six inches or one hundred and thirty-eight inches and this space is divisible into eighteen spaces or steps each seven and three-quarter inches high which is the standard height of a step.

It is customary to break a flight of stairs in the middle by a landing which is simply a wide step. Therefore by placing one person on every other step and one extra person on the landing there is room on a typical flight of stairs for just ten people single file and no more. The fact that the door at the head of each flight of stairs on each floor opens into the stairway enclosure holds the limit at this figure.

So that a stairway forty-four inches wide will allow the floor above it to contain just twenty people and no more or the stairway will become congested and jammed in an emergency and this means a panic. These figures were derived from a study of typical New York loft buildings and were not intended to apply to other factories. Although there are many other factory buildings whose stairways conform to these figures there are also many which do not. It would be better therefore if the New York laws instead of establishing a definite legal capacity for every stairway whether it actually could accommodate more people or less were changed so that they would allow as many people on each stairway as it actually would hold safely. Such a change allowing one person on every other step for every twenty-two inches in width of stairway would be a fairer and safer limitation than the present one.

It is necessary also to have two stairway exits from each floor remote from each other so that in case one should be cut off by a fire the other may be available. But this does not mean that because there are two stairways the number of people on a floor should be doubled for if the fire should cut off one stairway the other would become jammed by the double number of people rushing into it. Yet this is what the New York law permits and this is another instance where it is bad.

In order to double the number of people on a floor there should be three stairs, one of which might be an outside stairs which should be used only by the people on the floor where the fire is cutting off access to one of the regular stairs. These people need descend only one flight of these outside stairs and they could then enter the floor below and being below the fire they could remain there or take their time going down the inside stairs.

As the fire would not be below the people using the outside stairs there would be no flames to endanger their safety during their descent so that by adopting the principle of limiting the number of people to the actual capacity of the regular exit facilities or of increasing the capacity of the exit facilities to meet the requirements of the number of people or of combining both methods the expense attached to fireproofing windows, etc., on outside stairs would be eliminated. We are not considering property protection which might require the fireproofing of many windows.

In regard to stairways containing "winders" which narrow their width so that in a right angle turn only half the width of each step can be used it was stipulated by the engineers that each winder should reduce the capacity of the stairway 10 per cent up to 50 per cent and it was hoped that this penalizing of such stairways would gradually eliminate them from buildings altogether as they are very dangerous inducing tripping and falling even when there is no crowding.

These were the results of the studies which the engineers made for the Factory Investigating Commission with the recommendation that they be incorporated in the Building Code. They then recommended that a simple statute be enacted in the Labor Law establishing a time limit of one minute within which people should be able to effect their escape in an emergency from a floor and three minutes from a building by the exit facilities so established.

They thought that the Legislature, the courts and the public generally would support such an arrangement on account of its simplicity and logic. Then if at any time there should be a question about whether a building was safe for its occupancy all an inspector would have to do would be to go there, give a fire signal and if all the occupants came out within the time limits specified the matter would be settled.

Those, however, whose duty it was to draft the law felt that it would be better practice to draft statutes which by regulating the construction of the exit facilities would make the latter so commodious as to insure thereby a safe egress within the time limits mentioned.

Let us see how this character of legislation has worked out.

First the floor occupancy of 20 was arbitrarily increased 50 per cent to 30 and then because there must be two stairs to a floor the latter figure was doubled to 60 increasing the engineers' figure 200 per cent. Then this figure was increased 50 per cent or raised to 90 if a sprinkler system would be installed and later this percentage was increased to 100 per cent making the final floor occupancy 120 or an increase of 500 per cent. In other words in New York the law now allows 500 per cent more people on a floor than the exits will accommodate in case a fire should cut off one of them. Stairways with "winders" were penalized only 10 per cent altogether instead of 10 per cent per "winder." So that the congestion which was originally deplored as being criminally dangerous is now legalized. There are still only the two alternatives for the occupants of a legally occupied New York factory in case of fire; viz., "to burn to death or to jump to death." So much for the character of legislation enacted.

This increase in occupancy due to the presence of a sprinkler system was entirely unwarranted and ought to be reduced. The studies of the engineers showed that the sprinkler system although a splendid fire extinguisher, and therefore desirable wherever inflammable conditions demand it for property protection, requires a temperature over 165 degrees F. to operate it. Consequently a fire has to develop to a considerable size before the air of the room has been heated to an extent sufficient to set it off and this heat is accompanied by smoke and gases from the burning material all of which tends to promote excitment and panic or worse. In the Kaye Building lawsuit which established the validity of the statute authorizing the Fire Commissioner to install a sprinkler system in a building if he should deem it necessary, ex-Fire Chief Croker testified: "If people had to wait in a building until such time as a sprinkler operated it is very doubtful if any of them would make their escape; they would die from suffocation and smoke." Fire Chief Kenlon testified in the same suit "people don't wait for anything when a fire breaks out, they start to go at once."

Fire Commissioner Adamson wrote a letter to the writer last fall on this subject in which he said: "I have always had the same thought which you have that it is inconsistent to grant an increase in occupancy of a building because of the installation of a sprinkler. The great danger in these buildings is not so much from fire as from panic and the panic could result from smoke and there could be sufficient smoke to provoke a panic even before the sprinkler system began to operate."

And yet nothwithstanding the present knowledge by the authorities of the unsafe conditions existing in factory buildings due to over-crowding, the laws still stand permitting them. It would seem as if the authorities, who are dealing with these conditions continuously and understand the laxity of the laws, would take the initiative in modifying them but for some reason best known to themselves they do not do so. A year ago after a fatal fire in Brooklyn the authorities were criticized because they were not familiar with the law sufficiently to know that it was faulty and even if enforced would not have saved the lives which were lost. Perhaps some day when there is a holocaust under existing conditions which though legal the authorities know are unsafe it may be brought home to them that the possession of this knowledge made them responsible for what happened.

At the present time the building codes of cities usually require several flights of stairs for buildings of large area but as the number of people selecting any one particular stairway in an emergency cannot be controlled, and thus the number using it limited to its actual capacity, the owners of such buildings supposing them to be safe exit facilities have wasted many hundreds of thousands of dollars of rentable area in them. These stairways are now required to be inclosed by a fireproof wall to prevent fire from spreading upward from floor to floor. The occupancy laws of New York as they now stand on the statute books, permitting, if a sprinkler system is installed, as many people on a floor as will jam these stairs with people on every step so that no movement downward is possible, are absolutely vicious and ought to be repealed. The doors to them open into the stairway enclosure and when the people jam into them in sufficient numbers to fill every step, these doors cannot be shut and consequently the stairs can fill with smoke but if some of the doors should happen to get shut they could not be opened and the smoke which had already entered, owing to the lack of ventilation, would asphyxiate the people. Enclosed stairways under such conditions become sources of danger instead of means of safety. There has been a growing tendency of late towards putting these stairways on the outside of the building and surrounding them with a fireproof wall and connecting each floor of the building to them by an open bridge. These are called " smoke-proof towers " or " fire towers."

One insurance company which lends money to prospective builders has announced that it would make no loans on buildings which do not include in the plans at least one such smoke-proof tower. These stairways merely because of the fireproof surrounding wall and exterior entrances have no more steps and therefore no more capacity than any other stairway and as they are entered only by going out of doors they are never used in daily service and their existence becomes forgotten particularly as they are usually located in inaccessible places. The space they occupy is therefore practically wasted and the money invested in them thrown away.

Outside unenclosed stairways on account of their inadequacy are only a little better than fire-escapes which have in recent years been condemned on the same account and because of their dangerous exposures and because flames from windows burn up the people who attempt to escape on them. This latter possibility has given fire-escapes the appropriate title of "human griddles." The stairs of most old fire-escapes are so steep that they are little better than ladders and if people cannot descend many flights of stairs, they certainly cannot go down many flights of ladders which in the winter may be covered with ice. These fire-escapes usually have drop ladders at their base which lessen their capacity at this point. The best fire-escapes have some type of counterbalanced stairs at their base, which is an improvement over a drop ladder as they have a greater capacity, but any moving appliance is dangerous for a crowd to use; in fact people have not only been injured but killed in ordinary fire drills on them.

But the outside stairs of the best type, now being constructed on the fronts, rears and sides of our 15 and 20 story loft buildings, which are classed as required exits and therefore allowed their quota of occupancy serve only to fulfill the requirements of a not only useless but a dangerous law which should no longer be kept on the statute books in its present form. A crowd owing to the physical disabilities of the average individuals composing it, starting to go down on one of them, would not succeed in reaching the ground.

Another vertical exit with which high buildings are supplied is the elevator. Elevator shafts serve as flues for flames and smoke in case of fire as the heat warps the runways and puts the operating mechanism out of service and the smoke prevents the operator from remaining at his post, they have never been entered in the catalogue of exit facilities, in fact the law does not recognize them as such. Occasionally a venturesome and loyal employee is found who will run his elevator until it can no longer be operated, still there are so many unfavorable conditions militating against its staying in commission any great length of time that it cannot be relied upon, and it would not be considered humane to try to enforce service of this kind. The possibility of elevators giving out between floors is also great and their occupants might then be roasted alive in the cage.

The point previously referred to about reserving a vacant step in front of each person must be kept constantly in mind in calculating the capacity of a stairway, for this regular spacing of the people on alternate steps must be maintained otherwise progress downward will cease. This can be observed any day and evening at theatres when people are making their exit from the balconies. On these occasions however there is an automatic release of this condition by the people behind waiting until those in front move down and vacant steps then present themselves but this voluntary action is lost when panic develops. Here the effect of the time element in the exit can be noted.

There was an occurrence at the rehearsal for a fire drill which was to be held in a loft building for the benefit of the Fire Commissioner two years ago on the third anniversary of the Triangle fire, where so many people were crowded into the stairway that every step was filled and no one could move down and then the crush began until a number of girls fainted. Of course the fire drill for which this was merely a rehearsal or test was promptly abandoned.

In the report of the Factory Investigating Commission reference is made to a similar occurrence at 548 Broadway on May 5, 1911, where owing to a false alarm of fire the girls in a factory rushed into the narrow stairway and crowded it until the balustrade failed and several were injured by falling to the floor below.

We do not have to possess very long memories to recall the panic at the Christmas tree festival at Kalamazoo, Michigan, where fifty-three people lost their lives in a perfectly straight run stairway of one flight above the ground when there was no fire at all.

Then there is the possibility of those behind treading on the clothing of people in front of them, thus causing a tendency to trip. There was a casualty of this kind in a factory on the east side of New York City not long ago in a practice fire drill in which a girl tripped and before the progress of the people behind her could be checked, she was trampled upon and seriously injured and subsequently sued the company for damages.

On Fire Prevention Day a year ago in New York City, one 12-story building required 15 minutes to be emptied by two stairways and one fire-escape and another building where only two upper floors were occupied 10 minutes were consumed and yet three minutes is as long as is generally conceded to be safe to keep people in a burning building.

An invitation to see the fire drill in a 22-story building on the same day was accepted with interest. Upon the arrival on the 22d floor, occupied by a factory employing 600 women, the proprietor promptly instituted a protest against carrying out what he vehemently stated was an outrage. He said that a few weeks before a fire drill had been enacted taking his employees down 22 stories to the street. They completely filled a smoke-proof tower from top to bottom in their egress. He said that of his 600 employees practically all were women, many of whom were married and some were in no physical condition to be subjected to the stress entailed by such a procedure. The effects of the drill upon them had been so serious that a number did not return to work for several days and he thought that others had not yet completely recovered. He said that a repetition of the drill would be over his protest and that the group present would have to stand the responsibility. It is unnecessary to say that the drill was abandoned. Many other similar instances could be enumerated of failures of stairs to serve as exit facilities under excitement but these will suffice to exemplify the principle.

Let us consider the fire drills using these vertical exits which the law now requires in all factory buildings. Notwithstanding the requirements of the engineers upon which the occupancy limitation principles were based, no time limit in the law is set for their performance. This was because the over-occupancy which the laws permitted especially due to the sprinkler influence could not be gotten out of these buildings within the time limit proposed. This is where the New York law is bad and ought to be rectified. A fire drill can be instituted in a low factory building occupied by one manufacturing tenant and will be more or less effective depending upon whether the occupancy is limited to the exit capacity or each floor has several separate and independent inclosed stairways leading to the ground so that the stream of people coming from the various floors will not collide.

Such a drill however when regularly repeated is expensive to both employer and employee in time and money. The employer loses in the reduction of the amount of product turned out not only during the half hour or more that the drill consumes but as the fatigue and excitement caused by going down stairs many flights and returning are considerable, the efficiency of the employee is lessened very materially for a longer period. The overhead or administrative expenses continue during all this time also and are a charge which the employer has to bear. On the other hand the employee loses the pay for the product which might have been turned out during the time consumed by the drill. As both employer and employee sooner or later realize that the fire drill is a perfact opera bouffe and useless performance they object to having to stand the cost which it imposes and it gradually ceases to be maintained.

In multi-tenanted factories such as loft buildings, it is impossible to get the co-operation of the different tenants in a mutual drill even if it would be physically practicable to take the overplus of occupants of the various floors down the stairways which have not sufficient capacity to accommodate it so that notwithstanding the law which is mandatory regarding such drills they have never been satisfactorily introduced.

Recitation buildings of all schools where many pupils are gathered cannot be emptied rapidly under emergency conditions. This situation has been more or less recognized by Boards of Education having public schools under their jurisdiction and they have installed fire drills which are frequently repeated with the idea in mind that when a fire would occur everyone would know what to do and no time would be lost in making an orderly exit from the building. The time limit of three minutes to empty these buildings has been adopted in New York City. There is no doubt that fire drills in unsafe buildings will facilitate an exit when children only are involved who are under rigid discipline but even they, when conditions of smoke and flame become serious, cannot be controlled.

Much objection has been raised by parents and physicians against these frequently repeated fire drills which are called at any and all times and in all kinds of weather. Children, particularly of the poor who are ill-nourished, anaemic or afflicted with heart, lung, bone or muscle affections and ignorant of the fact suffer more or less consciously from the exertion of a fire drill but either do not know enough, or are afraid to speak about it to their teacher and so have their condition seriously aggravated. In New York City children known to be afflicted with cardiac affections are excluded from fire drills. One would suppose that people possessing the intelligence of those composing a Board of Education who have no personal interests at stake would prefer to make their buildings safe by the introduction of a fire-wall in the first instance and then they would not require these fatiguing and time consuming fire drills at all.

Theatres, especially the smaller ones used for moving picture shows where the aisles and stairs are narrow, are dangerous even when these places are on the ground floor. A panic, from a flash in the film booth or a match head setting fire to some one's clothing, will develop a jam in the aisles which will cause injury and even fatalities. A design changing the dark side courts into well lighted corridors, eliminating the longitudinal aisles and increasing the seating capacity is interesting the New York authorities.

Department stores, particularly those with open rotundas in their center are probably the most dangerous buildings in existence to-day. A fire in one of these large stores, starting in the inflammable materials which are exposed everywhere would spread upward and involve all the floors at once and the crowds which instantly would congest the elevators and stairs could not effect their escape and there would result a holocaust which would put the whole nation in mourning.

Hospitals, asylums and homes whose inmates are blind, aged, babies and otherwise helpless, come into the category of dangerous buildings. These people could not move about without assistance and there would not be a sufficient number of attendants available within the short time allowed by a fire to insure their safety. The best safety measure which architects had been able to suggest for the rescue of these people in case of fire is a steel cylindrical chute with a helical slide inside of it like the "down and outs" at pleasure parks. It was proposed to throw the patients into these and let them slide down to the ground where they would be cared for somehow or other. This vertical escape would have such a damaging effect upon those who are ill or under surgical treatment that this has never been taken seriously and therefore is not in general use.

Hotels, apartment buildings, club houses, tenements, and private residences are, generally speaking, fire traps owing to the inflammable nature of their contents and their inadequate exit facilities. Even the latest and very highest type of these buildings when their contents get on fire become so filled with smoke that their inmates are overcome before they can escape and their only chance of rescue is by the firemen who have to risk their lives recovering them if possible before life is extinct.

Before the engineers of the Factory Investigating Commission had collected the facts regarding the failings of stairways as exit facilities for crowds under emergency conditions and had analyzed them, no such studies had ever been made. These studies however disclosed the causes of these failings to be complex involving not only the inherent limitations of the stairways themselves as to capacity but also the mental and physical characteristics of the human element which used them and which under the conditions developed during emergencies could not be controlled.

Consequently they brought forward and advocated the substitution of the recommendation endorsed by the *Engineering News* of the fire-wall bisecting the building from cellar to roof with doorways in it on each floor closed by fireproof doors. Should a fire occur on any floor of either section the occupants of that floor need only pass through the doorways into the adjoining section and close the doors after them. If the other floors of the section should be threatened by the spread of the fire the fire alarm would warn the occupants and they likewise would pass through the doorways on their respective floors into the adjoining section. A building no matter how many stories high or how many people were occupying it could thus be made safe as far as life hazard is concerned for the people on one side of the wall could pass to the other side in less time than a fire could develop sufficiently to endanger their lives. In fact by adopting the principle then advanced for the first time of proportioning the exit capacity to the occupancy, any section could be emptied within a minute which would constitute an ideal safe building.

The principle involved in this arrangement was so simple of adoption and so complete in its accomplishment of the results desired that it should have received at once the welcome which the encomium of the *Engineering News* warranted. There are few if any buildings to which the principle cannot be applied and generally speaking at a small percentage of the expense entailed in carrying out any other arrangement offered as a substitute. In many cases walls can be found already existing which at slight cost can be converted into fire-walls. In other cases where its introduction was supposed would destroy the practical use of the space or the artistic effect of vistas produced by large areas as in department stores, it has been shown to enhance the artistic appearance of the store as for instance in the new Wanamaker store in Philadelphia where it offers a place for the exhibition of tapestries, rugs, pictures, etc.

The present State law limits the number of people on a floor of a building divided by a fire-wall to the number which the smaller of the two sections will accommodate on its available floor space at the rate of one person for every five square feet. The recently enacted building code of New York City allows one person for every three and one-half square feet which permits undue crowding and ought to be changed.

In case of an emergency when the people have passed through the horizontal exit if the building is a low one the stairways of the safe section being in a normal condition can be used by the combined occupancy of the two sections all taking their time to go down and if the building is high, the elevators, being the only means of exit for people of average physique, would be available. Of course the elevators, in order to be converted into exit facilities which can be depended upon in a fire emergency, must be independently protected by the fire-wall and that protection must include the operating mechanism so that a fire on one side of the fire-wall cannot affect the elevators on the other side in any manner whatsoever. The outside fire-escape, that dangerous and grotesque disfigurement to any building and the smoke-proof tower, which having outlived its usefulness merely occupies valuable space would then be relegated to the limbo of oblivion with other obsolete equipment.

A fire drill in a building so arranged would scarcely be necessary but if required would be operated without fatigue and exposure and within a minute of time.

There are certain of these buildings which are referred to by the *Engineering News* as unemptiable by any other means which lend themselves very readily to this treatment. For instance, institutional buildings such as hospitals, asylums, etc., which started small and have had sections added to them, are of this type. Changes, installing horizontal exits in over 100 such buildings belonging to the Department of Public Charities of New York, have recently been carried out in order to make them safe for their helpless occupants. In case of fire those who are bedridden can be wheeled on their beds through the fire-walls without disturbing them in any way. Trustees of such buildings who realize the responsibility which they must assume should be anxious to adopt this measure to insure the safety of their wards. Department stores are another type of building which the *Engineering News* says can be made safe only by this means. The new Wanamaker store in Philadelphia is conspicuous in having adopted it although it is badly installed there. Gimbel Brothers have also recently installed it in their Philadelphia store.

Dormitories of large private schools and colleges are generally unsafe and are recognized by their officials as such. In a recent issue of the Monthly

Bulletin of the Department of Labor and Industry of the State of Pennsylvania there appeared three articles describing the fire drills installed at three of the largest girls' colleges in the country, each written by the girl having charge of the drill at her respective college.

Each of these drills was called from time to time unexpectedly at night and the girls were required to rise, dress hurriedly and go down the fire-escapes to the ground where each one reported to the drill master who checked her name on the roll.

Shortly after these articles appeared a letter was printed in a Philadelphia paper from a mother whose daughter had died from pneumonia induced by the exposure entailed by one of these drills protesting against their continuance. She spoke also of the bad effect upon girls who were naturally nervous and timid about fire and their constant dread at going to bed, that they might be aroused by the alarm bell and have to go out in the dark on the slippery fire-escapes.

The author was called in conference by the officials of one of these schools and found that walls existed in all the dormitory buildings which at little expense could be converted into fire-walls so that fire drills could be operated which would merely require the girls on each floor in one section of a building to pass through a doorway into the adjoining section and close the door after them and thus attain safety in less than a minute, instead of having to go out on fire escapes in all kinds of weather or even to go downstairs and then out of doors.

Since then they have not found it necessary to carry out these fire drills at night as the buildings are considered safe from the fire hazard to life.

The fire drills as previously enacted were simply barbarous and parents who value the health of their daughters should not send them where they would be subjected to any such hazardous performance.

People will have to become educated to the fact that stairways are not safe exit facilities for crowds in high buildings. In fact a large crowd such as compose the occupants of high buildings never can effect a safe exit by a stairway in an emergency. People in these high buildings have to depend upon elevators instead, but elevators including their operating mechanism to be depended upon must be in a safe section of the building such as is provided by a fire-wall. Elevators on each side of the fire wall will accomplish this result. In other words the fire-wall is an essential in high and crowded buildings and the sooner the authorities recognize that fact the less frequent and serious will be the results of fires in such buildings. Naturally there are customs which will have to be changed to accommodate its introduction but they are not difficult to effect and as soon as people realize that if they want real safety, they must adopt the only real safety measure which has been offered and they will not then hesitate to take the necessary steps to secure it.

When we give our serious thoughts to this subject what do we mean by safety to life from the fire hazard in buildings? Do we mean that buildings shall be built that people can only get out of somehow or other, in any old way or in any old time? Or does it mean that in this twentieth century we shall have arrived at a stage of civilization when we shall construct our buildings in such a way that they not only will not burn but that if their contents burn and the flames or smoke or gases threaten the inmates the latter need not burn to death or jump to death but can effect their escape without even injury from undue crowding or panic?

This means that our buildings must be constructed so as to offer zones of safety which the people can reach promptly and from which they can readily obtain release. It is a trite saying that there never was a fire (except of course one started by an explosion) which could not in its incipiency have been put out with a pail of water.

But a fire does not wait for the pail of water and in fact it does not wait for anything. It is not a respecter of time and if the pail of water is not applied at once the fire is going to grow larger and require more water to put it out and someone will have to bring the water there and apply it and so two things must happen. First, the people who may be endangered by the fire must be provided with the means of getting away immediately, not in thirty minutes or fifteen or ten or even five minutes. One minute is long enough to hold people in a room where a fire has been started and three minutes is as long as people should be held in a burning building.

And second the people with the water must be summoned and ways and means must be provided for them to get up to the fire without having their avenue of approach blocked by the other people who are effecting their escape.

The engineers of the Factory Commission set the time limits specified after finding that they were not only reasonable to demand but because they were practicable of attainment and in fact were being attained constantly in factories and in public schools where fire drills with a time limit were installed. By the application of the principles of proportioning occupancy to exit facility any building can be made to meet these requirements. Two people abreast can pass through an opening forty-four inches wide in a second. Suppose a floor is supplied with two interior inclosed stairways and an exterior stairway or one interior stairway and a fire-wall with a doorway in it. In either case it could have safely an occupancy of forty people. In a fire drill these people would be divided into two groups of twenty, each of which arranging itself into ten couples, would go to its respective exit which it would pass through in ten seconds. It can readily be seen that as the occupancy increased and the exit capacity increased proportionately with it, one minute would be an ample time limit within which to empty the floor. Similarly, these ten couples would be able to go down six flights of stairs from the top floor of a seven-story building allowing ten seconds to a flight within a minute and a half, so that a three-minute time limit would be ample to empty such a building with such an occupancy on every floor below it.

Buildings higher than seven stories should not be emptied by their stairs because the physical exertion of going down six flights of stairs is as great as the average person can stand, especially in the excitment of an emergency. The occupants, therefore, should be taken care of by horizontal exits and elevators so that this situation also would be safely taken care of.

The fire drills now being installed can readily be converted into a test of the rapid emptiability of a building which is the service which the engineers intended them for.

A time limit of a minute to a floor and three minutes to a building should act as a test of the measure of safety to life which a building possesses and all buildings should be submitted to such a test and be required by law to meet it.

And a zone of safety was devised behind a fire-wall where the limited occupancy of each building could go within the time limit and leave the stairways as avenues of approach for the fire fighters to use. Such a zone can be provided in any building and should be required by law.

Sooner or later the laws will be re-drafted so as to require these safety measures and in order to make a beginning in this direction, the following modifications to the present laws are submitted for consideration.

SUGGESTIONS FOR CHANGES IN THE PRESENT LABOR LAWS

§ *79-b-1 required exits:* omit from Labor Law and insert the following in the Building Code:

Every factory building seven stories and less in height shall be provided on each floor with at least two means of exit or escape from fire, remote from each other, so that if one is cut off by a fire the other may be available. One of these on every floor above the ground floor shall be a horizontal exit or an interior stairway inclosed as herein provided; the other shall be such an interior stairway or a horizontal exit or a fire tower or an exterior screened stairway or an approved firee-scape.

Every factory building above seven stories in height shall be provided with a fire wall either trans-secting it from cellar to roof or acting as the party wall of the adjoining building or as an outside wall in conjunction with the outside wall of an adjoining building supplying in each case respectively, approved horizontal exits on each floor leading to approved stairways and elevators.

§ *79-e occupancy:* change to sead as follows:

The number of persons who may occupy any factory building or any portion thereof above the ground floor shall be limited to such a number as after a given signal can escape safely either altogether from the building by means of vertical exits within three minutes or from the endangered section of the building by means of horizontal exits within one minute, in each case the possibility must be considered of one exit being cut off by the fire.

Omit from the Labor Law and insert in the Building Code as follows:

1. No more than one person shall be employed on any one floor in any factory building, for every twenty-two inches in width of every two steps of the stairways leading therefrom to the floor below, and one person for every five square feet of landing and hallway on the floor below provided that the doorways leading to such stairway are wide enough in multiples of twenty-two inches to allow all the people to make their exit from the floor to the stairways within one minute after a given signal. On account of the possibility of the fire cutting off access to one such stairway its capacity shall not be considered in determining the legal occupancy unless an outside fire-proof stairway of equal capacity which may not be inclosed be supplied.

4. In any factory building if any stairway has steps of the type known as "winders" a deduction of 10 per cent per winder up to 50 per cent shall be made in calculating the capacity of such stairway.

7. In any factory building where a horizontal exit is provided on any floor as many people may be employed on such floor as can occupy the smaller of the two spaces provided by the fire wall either in the building or in an adjoining or nearby building in addition to the occupants of such smaller space allowing five square feet of unobstructed floor space per person, provided that the horizontal exits shall be wide enough in multiples of twenty-two inches to permit all the occupants of the larger space to pass through them within one minute after a given signal. On account of the possibility of the fire cutting off access to one such exit, its capacity shall not be considered and the stairway to the floor below may be used in its place, the people then utilizing the horizontal exit on the floor below. The stairways on either side of a horizontal exit need not be fire-proofed and the elevators may be utilized as exit facilities.

8. Omit § *79-e, subdivision 8,* increasing occupancy on account of the installation of a sprinkler system.

§ *83-a, subdivision 2:* retain that part of the first paragraph requiring fire drills but omit that part beginning "except in buildings * * * " which have sprinklers.

COMMISSIONER LYON: Now these two very interesting papers are before you for discussion.

GENERAL DISCUSSION

MR. ————: I quite agree with the theory that the proof of the pudding is by eating. I believe that a good many of those things are possible, and others are impossible of being carried out. A good deal should be left to the factory inspector, whose duty it should be when he inspects that factory to order fire drills at the time and make some observations. You know when we build a new factory and have only a limited space to build it we cannot build an ideal building. A good deal of that should depend on what the factory inspector finds there, and he goes about and makes such alterations as are necessary. Now, then, we have at our factory a fire tower six feet away from the main building. I am unable to tell whether this is counted as a stairway or only as an exit. The factory inspector calls it a stairway. I do not. Now the main thing in all these laws is the spirit of the law more than the letter. We have a fire drill every month, summer and winter. The occupants never know when the bell will ring. We haven't the least bit of difficulty. It was said by the speaker preceding me that there were certain stairways or exits that the people did not know anything about. That is a funny statement, as far as I can see, because if anybody creates stairways in a factory and elsewhere and doesn't make use of it, or at least sees to it that full use is made of it, then there is something wrong with the manager, not with the Commissioners or with the exit. Every one in our place knows the exits, because they always go through those exits on the occasion of fire drill. Now there is one thing I find in the law, and that is that some of these expressions are not quite clear even to the factory inspector. For instance, he says that all doors on fireproof stairways should be automatically closing, and he counts this fire tower, built six feet away, as a stairway and should have automatic closing devices. Now there is a fireproof door on the building itself, which has an automatic closing device. Then we enter into the fire tower, through which people want to get out. This automatic device keeps pushing against them. Other people come downstairs in this fire tower and they also are interfered with. Of course this may be a minor detail. I haven't put the automatic device on, although it is ready to be put on. It isn't only the means of exits you have. It is how you handle the people in the factory and make use of the exits, more than the laws. That is my opinion.

MR. RUDOLPH MILLER, Chairman of the Board of Standards and Appeals, New York City: These papers are of course very interesting to me, especially as I have given a good deal of study to this subject, and for a great many years have been connected with the Building Department of the City of New York, off and on, I guess something like twenty-one years. It has been very interesting to watch the development of this question of exit facilities, from the days when I first went into the department, when the only thing was, as Mr. Forster pointed out, fire escapes put on at the discretion of an inspector, and as he thought necessary. At that time fire escapes consisted merely of balconies connected by ladders. My criticism of Mr. Forster's paper is that he laid too much stress on this fire escape, because, as he said, in New York City I think we feel that the fire escape is now only a makeshift. We believe that the exits in the form of stairs should be real stairs, not these makeshift stairs, which are in some ways more or less of a menace, rather than a fire escape. Of course we have hundreds, I think thousands, of buildings in the city in which it is practically impossible, without destroying the property for its present use, to put in the additional exit facilities that ought to be in those buildings, and we have got to resort to some sort of a makeshift. I think the Commission in framing the New York State factory law very wisely provided that the fire escape should not be accepted as an exit under conditions specified by the Commission. So that it becomes plain in the acceptance of such fire escapes as means of egress that it is as a last resort. Now there has been a difference of opinion between the two speakers as to the best means of carrying out people from a building. One of them seems to think that the better way is to carry them down vertically through stairways. The other seems to think that that is not the best way. I think, the proper course, perhaps, lies between the two methods. Both ought to be taken into account. There is no question about it. In these tall buildings, when you get over seven stories, I have watched the time required and the effort required, which is more serious perhaps than the time, because when we get to the higher buildings we always have them fireproof construction and they are safer for that reason, and the stairs are places of safety, comparatively speaking, and people can go down them quietly, but it takes time, and as Mr. Porter has indicated, it takes at least a minute for a flight of stairs, and that is, I think, a rapid exit. Then there are a great many people who cannot walk down twelve flights of stairs without collapsing. So that it is not an entirely reliable means of exit when you get to the tall buildings. If you are within seven stories, that might possibly work better than the other method. Mr. Forster said something about the horizontal exit, and he spoke of taking too many people on one side of the horizontal exit from the other side. The law prescribes that you shall allow five feet of unoccupied space per person. Surely any floor that is constructed for any purpose should be built to carry one person for every five square feet of unoccupied space. Granted that the floor is already loaded with machinery, the unoccupied space, however, still ought to be able to carry all those people, provided the space is there, and we must remember that the people are not going to stay there. They have gone to the other side of that horizontal exit for the purpose of getting away from the fire. And the definition of the word horizontal exit provides that it is not a satisfactory horizontal exit unless there is also a stairway on each side of that horizontal exit, so that as soon as the people get by that horizontal exit they will naturally endeavor to get out of the building, and they can do so quietly by means of the stairways in perfect safety, or, as it may develop, it may not be necessary to get out of the building, because the fire may be put out before people get out. Undoubtedly the form of construction has a great deal to do with the question of stairways that should be, or the facilities that should be provided. If the building is fireproof there is not nearly that need of getting out so promptly as if the building is non-fireproof. In the non-fireproof building the fire is going to spread rapidly. In our fireproof buildings, unless there is some defect in the construction, vertical openings unprotected, as they should not be except under very unusual circumstances, which should be otherwise safeguarded, there is not such a great danger. Let us say that a fire occurs in the seventh story of a twelve-story loft building. Those persons that are below the seventh story might feel quite safe in remaining there until those above have been able to get out. Now my thought is, and I think this is the rule of the Labor Law, I know it is of the New York Building Code, that the stairway and enclosed stairway is practically a horizontal exit. Mr. Porter has criticized the stair and the capacity of the stair. If all the people tried to get into that stair at one time they are going to jam the stairway and they do not get out. But if there is ample space on those stairs and within the stair enclosure to take care of the people in that building, why isn't it as good a horizontal exit as his division wall through the middle of the building. After the people get to the other side of that wall they are quite as safe as if they were on the other side of his fire-wall. Of course the fire-wall is not without its possibilities of failure. Mr. Porter has criticized the sprinkler on the theory that sprinklers fail occasionally. They do. We know that, but the percentage of failures is very small. I know that the horizontal exit also fails. I have made many an inspection in buildings of various character, loft buildings, factory buildings, where the horizontal exits, the doorways which were relied on in these particular cases, not as horizontal exits at the time, but the automatic doorways were so blocked that the doors would not close. Now that is a thing that is liable to happen, and that can only be prevented by good housekeeping, as the reliability of the sprinkler system is maintained by proper inspection. I feel that some allowance should be made where the sprinkler system is placed for the same reason that I have indicated that I think a fireproof building should have some allowance above a non-fireproof building, for this reason, that the sprinkler will work sooner or later. It may be that in the one particular floor the heat does rise and smoke develop to an extent that becomes dangerous to the occupants before the sprinkler has operated, but for that reason, I think the sprinklered building is entitled to some allowance. It seems to me that there are two main considerations in the construction of exit facilities, in stores particularly, namely, that they should have ample capacity, ample width, to take the number of persons to be accommodated, and should be sufficient in number. In regard to the width, I think the provisions made in the Labor Law, which are also repeated in the New York Building Code for other buildings and factories, are very sensible and reliable and satisfactory. They provide practically for stair enclosures as horizontal exits. That is, the entire occupancy of the building can get within the stair enclosure, if they are designed according to the Labor Law, and then get out quietly. I want to refer to a point which was referred to by Commissioner Lynch in this connection, and has some bearing on what the previous speaker has said, in regard to the inspection of buildings. We cannot leave this matter altogether to inspection. The man in building a factory or any other building wants to know beforehand whether or not when he builds that building he can use it for the purpose he intends to. For that reason, we must as far as possible tell him in the law, officially, what will be required. I believe in the greatest freedom to the designer or to the owner, and that the law should provide only the limitations that are necessary for the protection of those who use that building, and for the protection of the rest of the public.

Those are the things, the limitations that must be fixed. Otherwise I think the greatest freedom should be allowed. Then one other point I wish to refer to, one made by the Chairman, Commissioner Lyon, as to having public sentiment back of the law. I personally have had a rather trying experience in that respect. For months previous to the Asch building fire we endeavored to get what we considered proper exit facilities in buildings in the City of New York. The difficulties were enormous. We ran up against the law and the magistrates, and I am sorry to say the magistrates rather felt these orders were persecutions and not prosecutions to secure safety to the public. And unless you get that sentiment, the public sentiment back of these provisions, as the Commissioner has indicated, it is practically impossible to enforce them. Sometimes it requires a serious calamity to make it possible to get what is right and proper. A great deal of trouble has been experienced sometimes even when we got the law enforced. I remember one case, for instance, where in a certain building there had been ample staircase facilities provided. Three staircases. They were properly built. An inspection, however, indicated that only one of them was available. The occupant had built shelves across the other two doorways leading to the stairways. He was ordered to remove them. It was with the greatest difficulty that he actually removed them, that we compelled him to remove them. We were suspicious and in about three months later we made another inspection, and he had done the very same thing again. That I merely mention as some of the difficulties which the Commissioner has referred to in the enforcement of the law. It requires co-operation on the part of the public and the enforcing officials to get the real safety that we need in our buildings.

MR FORSTER: I ask the indulgence of the audience for just a moment. It appears as though my reputation has had a few dents put into it. I rise to make certain explanations. In the first place the question of whether or not I favor horizontal exits was brought out, and Mr. Miller's assumption is I did not. The best way to get people out of a building is first to move them through a horizontal exit. I discussed the capacity in number of persons in buildings based on the unit of stair width, and if that plan is adopted it will take care of a building without a division wall. If you put in a division wall, as is suggested, you could ordinarily double the number of people which those stairs would allow. I am keen about the division wall, but I recognize its limitations if used without regard to stair capacity. Mr. Miller raised the question of floor load. The point that I made was that you could put so many people on one side of a wall on the five square feet basis, where the floor was not very much covered by benches and machinery, that the single thirty-six-inch stairway, which would be required on the other side, would be seriously overloaded. Mr. Porter and I are together in the thought that there ought to be a limit of time in which a building is emptied. Mr. Porter suggests three minutes. Whether or not three minutes or any other time is correct, it is, in my opinion, necessary to have a schedule which covers the situation, by some such scheme as I suggest, that would not make it necessary in the case of every single building, once a month or more frequently, to hold a test drill to find out whether the owner of the building has got his people trained. Mr. Porter has referred to the famous Kaye case in New York. I have got a good deal of profit and pleasure from reading the case. I have the final appeal taken to the Appellate Court here before me, and I was interested to observe that Fire Chief Croker in New York, who is the author of a book on Fire Protection, has spoken exceedingly favorably of sprinklers in one chapter which was introduced by the attorney who questioned him. Mr. Croker said that perhaps the chief merit of these devices lies in their prompt action. They are often the first weapon that is employed against the flames, and are thus given the advantage of being in at the start. Also, he says, in fire fighting the most desirable thing is prompt action. "And I could mention scores of cases in which sprinklers had completely extinguished fires before it was realized that anything was wrong. I have personally seen so many examples of sprinklers in successful operation that to enumerate them would be tedious." Then, when it came to cross-examination, Mr. Croker was asked whether he had changed his mind in any respect regarding that chapter, and he stated that he had only in so far as the sprinklers being a life saver. He still thought the sprinkler was a property saver, but not a life saver. Chief Kenlon, now the head of the department, a most experienced and able man, when on the stand, made a most favorable set of statements regarding the sprinkler. He speaks of a particular fire on Broadway. " I was there at the fire. I arrived there a few minutes after the fire broke out. I do not carry a stop watch. I could not time it. According to my best estimate I was there two minutes after the operation of the sprinklers." Then the question was asked in regard to the saving of life and he said that he thought 100 people were saved by that sprinkler operation. The verdict of the court was in favor of the city. And that momentous decision, from the standpoint of sprinkler requirements, has enabled the authorities in New York to enforce the installation of sprinklers. The fire-fighters on the whole have been rather slow to recognize the advantages of the sprinklers, but the International Association of Fire Engineers, I think, now has endorsed them, so as to leave no doubt as to where they stand.

Mr. Heckman, Chairman, Technical Advisory Board, Associated Manufacturers and Merchants: I fully agree with Mr. Porter in his estimate of the value of horizontal exits, but I am a little afraid in his effort to emphasize the value of horizontal exits he has spoken disparagingly of the vertical fire tower. He says it won't be used. He forgets that in the New York State law the entrances to all such exits have to be marked by signs and red lights, such as he referred to on his horizontal exit doorways. He forgets that we are required to have fire drills which train people to use these fire towers. I see no more reason why people should forget to use the fire tower than they would a horizontal exit. He limits the capacity of stairways to the number of people who can occupy those stairways, assuming that the people stop after the stairways were full. Now as a matter of fact the people won't stop. They keep on going and leaving the building. I have made a number of tests along that line and I find that the average stairway can be filled in from thirty to forty-five seconds. His own time limit, which I think is the basis of all these figures he has there, within which he said people should get out of the building is three minutes. Another point, I think that the time limit should be placed on the relative combustibility of the contents of the building. Obviously, the people have got to get out quicker if the contents are rapidly combustible than if there was no combustible material, and that fact should be taken into consideration. I do not care to press my own personal experience, which is slight, as against the experience of these fire chiefs and other students, but I personally cannot agree with Mr. Porter in his statement that sprinklers are not life savers. I have seen a number of instances where the sprinkler operated, one where I was within two feet of the fire and a dash of water came down. I wasn't burned. The sprinkler did it. And there are innumerable instances of that sort. I think it would be a great mistake not to allow credit for the installation of the sprinkler system.

MR. C. H. THOMPSON, Eastman Kodak Company: In listening to this discussion this afternoon, the one point I think that we have not emphasized enough is the necessity for fire drills. Now I have seen a good many fire drills in various factories, and a majority of them are a farce. First, that the superintendent or those in authority have not insisted on discipline, and the employees have regarded the matter as a sort of a joke, and they walk out laughing and talking and no order at all. And these drills will be probably one every three months, which I think is insufficient. Because you do not get discipline, they forget them, and I think once a month the drills ought to be conducted. Our experience is this: We have at least one fire drill every week in each department, and then once a month have a general exit. Everybody on the street. Our factory is seven stories, and we have about 2,300 people, and we get out in four minutes and thirty-five seconds. The point I want to bring up is this, that by having a fire drill about half-past three in the afternoon, when everybody is dopey, tired, by giving the fire drill they come back freshened up and we find that instead of reducing our production, it is increased. I would say, gentlemen, that fire drills once a month is not frequent enough. Fire drills once every three months is a farce.

MR. CANNON: As a laborer on the fifteenth floor of a building of not very good type, I would like to know what has been thought ought to be done for those above the seventh floor. As far as I have been able to gather this afternoon, the discussion has been about those on or below the seventh floor. What are we going to do with the rest of them?

MR. FORSTER: I am called upon to answer that question. I stated in my talk this afternoon that this tabulation that you have before you was simply carried up as far as seven stories, but the same maximum exit would apply to high buildings. We don't have, except in New York City, any appreciable number of factory buildings higher than seven stories.

COMMISSIONER LYON: I suppose Mr. Porter would say, go through a fire-wall and then send them down an elevator. I think probably the proper solution would be a fire-wall and elevator. I would like Mr. Miller, who, I believe, has made some considerable study of this, to give us some idea of the capacity of elevators, and whether it would be practical to put fire-walls in the office buildings of New York City, some of which are very bad, and some extremely bad from the standpoint of fire risk, and a good many of them do not come under the Industrial Commission. I would like to have Mr. Miller give us some idea of the capacity and the number that are required, and the practicability of applying them to existing buildings.

MR. MILLER: We have never given the elevator any specific credit as an exit, possibly for the reason that you cannot be sure of its being there. If you have an operator who is easily scared and unreliable, he will run down to the bottom and he will get away and your elevator won't come back. For that reason we have felt that it is unwise to trust to the elevator as a means of exit. It is an excellent auxiliary and if it is properly handled can, especially in our tall buildings, serve a very useful purpose. Mr. O'Keefe, who was a few years ago a Deputy Fire Commissioner in New York, pointed out in a certain fire how much more could have been done toward getting the people out of the building if the elevator operator had only thought to carry the people from the top floor down to the floor below that on which the fire was and let them out, instead of taking them clear to the bottom of the building. So much depends in the operation of the elevator on the judgment of somebody that it is not to be relied on. The stair is there. That is something fixed, and the fixed things are the things that we can count on. Reasonably count on. As I said before we cannot always be sure that they are absolutely safe, because of, perhaps, improper housekeeping conditions. Housekeeping conditions are something we cannot foresee, and will vary from time to time. We will get one superintendent of a building who is keeping his building up in the best sort of order, and bring everything right up to the mark, and another one who is slovenly comes in and succeeds him, and things are otherwise, and there is carelessness all through the building. Things are allowed to gather in the doorways so that the fire-doors won't close. If you have got that kind of a man why then the conditions are going to be bad. I believe that we ought to simply provide certain exit facilities. Give the designer freedom in what he wants to do. If a man wants to design a building for sixteen occupants he ought not to be made to provide exit facilities for 150, but thereafter he must be limited in that building to sixteen if his exit facilities are designed for only sixteen. If he wants a building that may be used for 150 occupants, let him provide the exit facilities for 150, the same as to-day we post our floors in our buildings as to the safe-carrying capacity for loads. We can post our buildings, so many occupants per floor, and I think that should be done. And it might be applied to the existing buildings very much in the same way as it is applied to new buildings in our new law. It is only in the old buildings where we have the difficulty, and there we will have to make the best provision we can. In the case suggested, I think the horizontal exit certainly does offer an excellent solution.

MR. CANNON: I fully realize the limitations in the capacity of elevators as an exit. I also realize the limitations in the capacity of legs as an exit. I question very much, and sometime when I get back to New York I am going to try it, but I question very much whether I could go down fifteen flights of stairs in any reasonable length of time and get out of a building that I am in, and I do not carry very much excess weight. I am wondering how many flights of stairs some of our stouter friends could go down and feel that they would be safe, or how high they would feel safe in any building where they could not depend on the elevator. I believe some considerable progress could be made along this line in controlling the elevator operator. I think probably that considerable could be done in that.

MR. PORTER: I think the elevator could be depended upon if it is back of a fire-wall and if the operating mechanism is also back of a fire-wall. That is, if you have two sets of elevators in a bi-sected building, and the operating mechanism ought to be bi-sected as well, I think you will have elevators which you can depend on. This question of stairway congestion which is permitted under the law in New York, and to which Mr. Miller has referred, and which Mr. Heckman has stated he thinks is all right, we find happens frequently in New York. There was a false alarm of fire which took place near where the Factory Investigating Commission was at work down at 581 Broadway, and the girls in the factory two flights up ran out into the stairway and jammed it so full that the balustrade broke and the girls fell over onto the floor below and had to be taken away in an ambulance. We were invited by the Fire Commissioner two years ago to see a fire drill in a twelve-story building, and that was under the supervision of ex-Fire Chief Croker, who has a company which carries on fire drills. It was when they were having a rehearsal, and four days before Fire Prevention Day, when they were going to have an exhibition of this drill. We saw the rehearsal, and there were over 100 girls on each floor, and they went out on a stairway and filled it in such a way, as Mr. Miller thinks is all right, and they jammed it so tight that the girls fainted. Fire Commissioner Adamson prevented that fire drill taking place on Fire Prevention Day. The jamming of the stairways, so that there is a condition of filling every step prevents the people from going down as there is no step for them to tread on. When you have got more people on a floor than can get into the stairway, of course they extend back into the floor, into the loft, and then if there is fire or smoke, it goes through the doorway into the stairway where the people are, and they become asphyxiated. There is a danger of this over occupancy of the stairs, and that is what I am trying to get changed in the law.

COMMISSIONER LYON: Of course you have always got to recognize the fact that a scared man or woman is the most senseless thing in the world, if they are thoroughly scared.

MR. JONES: Just one suggestion, two, in fact, that we must bear in mind in regard to the elevator exit, and that is, that the man who loses his head running that elevator, if he had a head would not be working there. He would be working somewhere else, or working for himself. And the second is this, every argument that has been advanced this afternoon practically has been advanced for the City of New York. Now the Industrial Commission have something else to do besides legislate or try to take care of New York City alone. We who are here must recognize the fact that the Industrial Commission must think of the entire State outside of the City of New York. Now the average seven-story building, as used by my friend in his argument, is all right for New York, but what are you going to do in small villages like Binghamton, where a twelve-story building is one of the things that we point to with pride. What are you going to do in small villages, we will say, like Oswego, where they haven't got a five-story building. Those are the things that you have got to take into consideration when we put up to the Commission the advisement and enactment of laws for the entire State.

Mr. Forster: I think that is what I referred to, that we ought not to limit the capacity of a stairway to any particular figures. The figures which are in the law now are the result of studies of New York loft buildings, and I think you ought to say that you could have as many people on a stairway as will fill every other step that is a multiple of twenty-two inches wide.

Mr. Miller: I just want to say that Mr. Porter's theory of a horizontal exit is just as correct on a second floor as it is on a twenty-second floor. And my point was that we should make our stairs ample enough so that they can serve the same purpose as his horizontal exit, and can take all the people the same as he would take them to the other side of the fire-wall.

Mr. Schafer, Duofold Health Underwear Company: I have had forty years' experience in knitting mills, and I believe that if the Industrial Commission to-day would give more attention to the sprinkler system in manufacturing establishments of all kinds they would eliminate a lot of trouble that faces them to-day. There would be many lives saved. I would not think to-day to run my mill fifteen minutes without a sprinkler system in it, on account of the cost of insurance, destruction of property, the loss of life, and many other reasons. I believe that a great deal of the difficulties to-day that exist in manufacturing establishments could be eliminated by having a law that will force the installation of a sprinkler system that will protect the property against fire, and when you protect your property against fire you are saving life.

Mr. Curtiss: We have heard from the two gentlemen who have read the papers on exits. I believe the automatic sprinklers are mighty good. I am interested in this, and I am wondering if a well-organized and well-equipped fire department cannot play an important part in the matter.

Commissioner Lynch: I am rather anxious to know, curious to know, how that suggestion that there should be a law to compel the installation of sprinkler systems meets the views of the up-State manufacturers who occupy, generally, buildings four and five stories in height. And then there was this other question that Mr. Miller referred to, and I referred to this morning, but the discussion turned to the composition of floor material. Mr. Heckman talked to a very great extent on the construction of four and eight-story buildings. Now a man puts up a factory building in one of these small towns up-State, for a non-inflammable occupancy, limited, as Mr. Miller says, in the application for the approval of the plans to fifteen people on a floor. It being approved with the understanding that that was all he could have on his floor. I think that meets Mr. Heckman's idea, and which would be entirely feasible in New York City, but in an up-State town, the man that puts up the building sells it and goes out of business. Our inspector comes around six months after it was sold and he finds that same building occupied by a highly-inflammable industry, with forty or fifty people on a floor. They had gotten in there before he had gotten there. Then he goes to the court and makes his presentation to the court of this small town. It is presented to the jury, and as Commissioner Lyon says, the jury brings in a verdict of not guilty. Then what are you going to do, Mr. Miller? There is quite a difference in the problem of proper supervision or frequent supervision of the factory building up-State and the frequent supervision that is possible in New York City with a very much larger force of inspectors than the State Industrial Commission possesses. Of course that is Mr. Miller's proposition. All of these problems come in with the consideration of the buildings, with the exits of buildings, the conditions that surround the buildings, and I am inclined to agree with one thing Mr. Miller said, that in considering the building the horizontal exit and the vertical exit should both be given consideration, for if we are to believe the experts about it, it is impossible to get out of a building either with vertical or horizontal exits.

MR. FORSTER: I would like to ask Commissioner Lynch this question, or rather make this point. It is undoubtedly difficult to administer many enactments or many requirements of the kind that have been suggested here to-day, but the Industrial Commission to-day is supposed to be, that is, as far as it has ability to, exercising supervision over the number of persons in buildings which now exist. You have rules on that subject, and supposedly they are being enforced, or supposedly the employers or building owners are obeying the laws without supervision. In fairness to all parties, and without any appreciable jeopardy of life, we can put the proposition upon a basis that takes into account these various factors.

COMMISSIONER LYNCH: Isn't that the problem that we have got to meet, taking into consideration the physical qualifications of the buildings in which these exits are, and then working out a plan which makes that particular building reasonably safe, and protecting the lives of the people who are employed therein. And remember that this Commission is not concerned under the law with the protection of the property. We are concerned with the getting of the people out of a particular building if a fire should start in that building. And as I said this morning, the law does not apply to the office building. So far as the Factory Law or the Labor Law is concerned, they do not apply to the office building. But the Labor Law, kept where it is now, to at least a reasonable extent, so far as the construction of factory buildings is concerned, is having to-day, and will continue to have, a good effect on the entire building practice of the State.

MR. M. H. CHRISTOPHERSON, Otis Elevator Company: I would like to say in connection with the discussion of to-day that I think the principal good has come of the general education by the Industrial Commission and in the exchange of views by manufacturers. I will cite a case in our Yonkers works, in one of the old buildings, in connection with a plant such as ours. There are some old buildings, thirty or forty years old, built more or less on the apartment house plan. Not much better. There are some later buildings there quite up to date. The old buildings have been used for a number of years for the employment of men and women, and in those buildings, in one building in particular, four stories high, where girls are employed, there were formerly iron winding stairs put in, probably fifteen years ago. When the Labor Law was enacted and the inspector called on us, in the one building in particular, the first request we had was for a certain type of fire-escape. We installed it. Later on we put in metal sash and wire glass surrounding that fire-escape. Later on there were certain other changes, and we removed that fire-escape. It was not up to requirements. We were perfectly agreeable and willing to do it, because we wanted to do what we thought was right. In other words we began to learn something from experience what these inspectors and the law required. We have now in that old building two fireproof, well-built stairways, and have also in addition to that, on account of it being beyond the 100-foot limit, a well-built fire-escape on the outside. We also have a horizontal exit to the roof and another one over the top of the boiler house. A great deal I think can be illustrated from that. And within the last year I had another escape built across the yard into an adjoining building. While that was intended for the handling of material, it was also connected in such a way as to make a good fire escape, making a horizontal escape. I just speak of these things as illustrations of how this education is going on, and what we learn from it. Last summer I came through the upper story of that building and I thought it was quite warm, too warm a place to work, and we put our foreman upon the roof and turned the hose on it. A matter of education. Now we are putting in a good ventilation system in that same floor. It is unreasonable, I think, to expect the Industrial Commission, or a lot of inspectors, to be able to accomplish all these things in a short time. I think during the few years it has been going on it has been remarkable in the improvement in buildings, and as time goes on these people, these manufacturers who object to spending the money, will also be educated. You cannot do it all at once. But I am pretty sure that a few years hence the improvements will be so great that those fears that Mr. Lynch has about up-State buildings and manufacturers, they are but the small factors, will come in line, and appreciate as well as we in some places have appreciated the necessity, and we have not been called to court for it. At our last fire drill our local fire chief, standing alongside of me when the men and girls came down, said: "Did you notice that it took longer to empty this building than any of the others?" An inspection of that proved that all the upper stairways led down to a lower story where there was more or less of a trap. That was changed, and there are four exits from the lower floor now. All these things are matters of education, and we cannot expect that everything can be done in a moment, and I think that the Commission and everybody has done remarkably well.

WEDNESDAY EVENING, DECEMBER 13

PRESIDING OFFICER: JOHN C. CLARK, VICE-PRESIDENT, STATE FEDERATION OF LABOR

MR. CLARK: Ladies and Gentlemen: The program being somewhat lengthy this evening, I will take up only a few minutes of your time, and I will ask you to omit any discussion until the end of our program. After listening to your Safety Congress sessions this week, I want to congratulate you who are taking such great interest. It is for the benefit of the working class of people. Saving life and limb is a great study, for our manufacturers as well as for our working class, and I want to say this to you to-night, especially to our manufacturers and to our builders, that if you will be guided by our present Industrial Commission of the State of New York, I cannot recommend any safer guardian angel for our working class of people. They may put a little hardship on you occasionally, but it is for the welfare of human life. And I am going to close by asking the manufacturers and builders of the State of New York to listen to and to be advised by our present State Industrial Commission.

Now the first speaker of the evening will be Mr. H. H. Cannon, Safety Engineer of the National Workmen's Compensation Service Bureau.

STANDARDIZATION OF SAFETY APPLIANCES

BY H. H. CANNON, NATIONAL WORKMEN'S COMPENSATION SERVICE BUREAU

I have been informed, as Mr. Clark was, that the session to-night is expected to be a long one. I had intended to make my paper very short. I will try to make it shorter. I will try to give it in homeopathic doses, without too much sugar. I will try to touch the high spots, somewhat as a Pullman car porter brushes your coat. The topic selected for me to-night is perhaps one of the most interesting, one of the most important, of all the subjects that confront the safety movement. Mere safeguarding of itself will not eliminate accidents, all accidents. As a matter of fact it will only eliminate a very, not a very small percentage, but a relatively small percentage of accidents. However, it is the foundation of all safety work. Without standardization, the superstructure of safety is impossible. Without standardization, safeguarding is haphazard, is wasteful and frequently increases rather than decreases the hazard. Without it former experience cannot be utilized, because the mere use of experience means that that experience is taken as a standard. Without standards we are always at the beginning, and progress is impossible. I do not believe it is necessary to state that the broader the experience the more equitable and useful the standard. Now let us consider what is meant by standardization. Any guard that completely eliminates all hazards is an ideal guard. Unfortunately such a guard is rare. Obviously we can eliminate all buzz-saw accidents if we eliminate all buzz-saws. I have heard some pretty wild safety engineers advocate some pretty wild things, but I have never heard anyone yet advocate that sort of safety work. I have expected to, and maybe some day we will hear of it. A guard which interferes with operation need not necessarily be discarded. When a guard interferes with operation, then we must measure the relative hazard against the relative interference and strike a balance which will give us a practical guard. Any guard which gives us a fair measure of protection and a fair measure of production should be considered a standard guard. Now, next, why are established standards needed? First, from the standpoint of the employer, standards are needed so that he can satisfy the law, and gain the maximum insurance premium reduction with the first set of guards which he installs, and so that he won't have to reconstruct all of his guards with each fresh visit of an inspector or, as he frequently feels, the visit of a fresh inspector. Second, from the standpoint of the State Industrial Commission, so its inspectors can show the employer how to fully comply with the law with the least cost to the employer, and can determine off-hand when the law has been fully complied with, or wherein it has not been complied with. Third, from the standpoint of the insurance carrier, so that its inspectors in the field in the various states can determine whether a reduction or an increase in the premium is warranted. Fourth, from the standpoint of the employer, from the standpoint of the State Industrial Commission, from the standpoint of the insurance carrier, from the standpoint of the general public, and last and by far the most important, from the standpoint of the workman himself. Standardization is absolutely essential if the maximum degree of safety is to be obtained. All of this is fundamental. I have no doubt that most of you know as much or more about it than I do, and I have never heard any considerable argument against standardization, or any argument which is not easily refuted. However, the most important phase is how can this standardization be obtained. Early in the safety movement, the recent concerted movement, there was a considerable scramble to be first. I have heard long drawn out arguments as to who started the safety movement. I think I know. I do not know that I can definitely place my finger on the man. I think it was either Adam or one of his ancestors. According to Huxley, in his " First Principles of Education," I think he puts safety as the second principle of education. If I recall rightly, and it has been a long while since I read it, the first principle of education, as laid down by Huxley, was eating and drinking. The second principle was safety. That is the first thing we learn, is how to eat and drink, and the second thing is how to keep from getting killed. This scramble to be first has done a tremendous good to safety. It has provided it with an impetus to get it going. The safety movement is now going. It is going good and hard. We no longer need, and I do not think we any longer have a scramble to be first. I never heard anyone try to prove that his corporation, or he himself, was the originator of the safety movement. About three years ago I was engaged in getting up a schedule for rating the hazard for merit, rating the hazard in electrical industry. This included safety standards for that industry. As soon as I got well underway I found that there were some seventeen other organizations all working on the same thing, and all seventeen were trying to be first to get out standards on safety for the electrical industry. The National Bureau of Standards was one of them. It had been delegated by Congress as the representative of the Government and of the people of the United States, to get up safety standards. After a good deal of hard work, the Bureau of Standards succeeded in bringing together all of the various organizations who were then working on electrical standards, with a number of others, especially those representing the workmen themselves, some of the labor organizations and some other organizations representing the workmen. And they have just published, about a month ago, their tentative rules for the electrical industry, the safety code, the National Electrical Safety Code, for trial and for criticism. I have not any doubt that that is the best piece of safety work that has ever been done. It is far in advance of the standards in any other line of industry. The moral that I wish to draw from that, and the reason that that was possible, was because everybody that was concerned was called together and they all got their feet under the same table and looked each other in the eye and bartered a little, and gave some here and took some there, and they all got on common ground. Our Bureau is doing a little, as much as it can, toward standardization. We are getting up volumes of pictures of machinery and other appliances, and tools and buildings and all sorts of things, so that every industry will be covered, so that any one who wishes to see how any particular hazard in any particular industry can be guarded, can take down one of our books and open it to the proper page and see. It is a tremendous piece of work. We have so far only published one volume. We are about ready to publish a volume on Woodworking Safeguards. Several other volumes are well under way. In order to get the maximum co-operation, we are going to have struck off, from all of the plates that are made, proofs which we will submit to every one that we can find who is interested, and who will give us constructive criticism, so that when these books are published they will represent the best possible work that can be done. They will represent all of the interests that should be represented. We hope that we can get the New York State Industrial Commission to criticise all of our drawings. We hope that we can get every other state Commission to do that. We hope that we can get manufacturers of machinery to criticise them. We hope we may even get some thinking workmen to criticise them. We hope, above everything, to get co-operation. The thing that I want to suggest to-night is to get co-operation in the formulation of safeguards and the standardization of safeguards. And I believe that the best possible organization to do that is the New York State Industrial Commission. Our inspectors cover the entire country, including New York State. We know by their inspections that, especially in the small plants, but taking the State as a whole, New York is tremendously in advance of every other state in the Union. The best work in safety has been done in New York State. I do not mean that necessarily the best safeguarded plant is in New York State, but the State as a whole is in far better condition than any other state in the Union. Dr. Jackson suggested the other day that the Commission in Pennsylvania and the Commission in New Jersey and the Commission in New York had all come to an agreement, that they would co-operate. My suggestion is that that be extended further and that every state in the Union that has a Commission, or is doing anything in the safety line, be brought into those three and that all of the commissions in the United States be gathered together to co-operate in the standardization of safeguards. I thank you.

MR. CLARK: The next speaker will be Mr. Luther D. Burlingame, who will speak on "The Hazards of Machine Shops," and also will explain to you, after a short lecture, the slides as they are placed before you.

MACHINE SHOP HAZARDS

BY LUTHER D. BURLINGAME, BROWN AND SHARPE MANUFACTURING COMPANY

As I was nearing Syracuse to-night I purchased an evening paper of this city, and I was pleased to note in that paper the unusually large amount of space given to industrial service work, to civic work and other things which go to the uplift of mankind. I believe that as our daily papers take more interest in these matters, and are taking more interest, they voice the sentiment of our communities. Also we shall be on a distinctly higher plane in this matter of dealing not only with safety, with machine shop hazards, but with all matters which go to make up those things which are for the benefit of mankind. I thoroughly agree with the speaker who has just preceded me in his emphasis of the need of standardization, and in considering machine shop hazards that is one of the things that I shall hope to emphasize and to impress strongly upon this gathering. In considering the matter of machine shop hazards in the past it has been thought that when we talked of machine shop hazards we meant guards to cover gears and other dangerous spots in machines. And whenever the matter has been stirred up and the question has been raised as to the great damage which has been done through accidents and the terrible loss which has come in our machine shops through the serious accidents which have occurred, we have laid them at once to the manufacturer as being responsible for the unguarded condition of machines. Now, as we have secured more data on that subject, as we have looked into the matter more deeply, many of us have been surprised to find that other forms of hazards are even of greater moment and cause the greater loss than the machine shop hazards just spoken of. That is, other hazards have to do with the human element, have to do with the matter of men falling and slipping and all that sort of thing, and are in no way connected with the mechanical hazards as having to do with the guarding of machines. So that, in dealing with this question, I shall take both points of view. That is, the guarding of machines and the question of the human element, and how to raise the standard of safety through education and the avoidance of carelessness. It is very proper that the manufacturer should take the initial step in thoroughly guarding his machines and see that they are entirely safe I mean by that practically fool-proof, as the expression has now become quite commonly used. And at the same time I have heard experts rather bewail the fact that we are going so far in the matter of guarding that men are losing their ordinary sense of carefulness and that they are introducing an additional hazard by the very carelessness with which they work, thinking that everything is guarded so that they cannot have an accident. In discussing this matter I would like to analyze somewhat as follows: First, machine shop hazards that have to do with machines, and dividing these into the group of those which can be guarded in such a way as to prevent accidents, and under this heading would come gears, belts, and revolving parts; and then, the group which are hazardous but which, owing to the nature of the work cannot be guarded but other means must be used in order to raise the standard of safety. Then, secondly, I would like to consider those hazards which are non-mechanical, such as I have spoken of, as slipping and articles falling on men, burns, and so on, and which are largely due to the carelessness of the workmen, and which can still be very greatly reduced. And as a subdivision under this heading I would like to consider the matter of hygiene, or health in the shop, which I believe is one of great importance. The stimulus furnished by state laws, both laws as to the guarding of machinery and compensation laws, in addition to the humanitarian considerations which have impressed themselves strongly upon manufacturers since the facts became more widely known as to the number and seriousness of accidents, have resulted in giving a great amount of thought and the expending of large sums of money in so guarding machines that even untrained workmen cannot be injured. Guarding has been carried by some to such an extent that a word of warning has been given by certain experts, urging that because machines are made so completely fool-proof workmen are losing the sense of alertness and of watching for danger, thus bringing about accidents which would previously have been avoided. As an illustration of this, a large slotting machine had exposed gears which under some conditions might be dangerous to the workman, and so a guard was put over the top of these gears, covering the point where it was thought the danger existed. It was found after the guard was placed in position that the workman used this guard to sit on, and could swing his legs under so that a new point of danger was developed. Another case was where a guard was carried partially around a pair of rolls so as to prevent the workman's hand entering between the pair of rolls. The workman reached over the top, resting his arm upon the revolving roll, with the result that the skin of his arm was drawn in and pinched between the guard and the roll, causing a rather serious injury. Some states have gone to great extremes in the requirements for guarding machines, and in case of such legislation, it is very difficult to have the statutes so worded as not to cause hardship when interpreted literally, thereby causing expense and inconvenience in operating machines, when there is really no gain for safety. Where intelligent and mechanically trained inspectors are employed, with a reasonable leeway as to the interpretation of the law, this objection is greatly lessened. An illustration is found in the laws of some states, including New York, providing that belts shall be guarded to a height of six feet from the floor. This is a practical impossibility in the case of many machines, such as those using cone pulleys, and having a belt to shift from step to step. It is believed that such a law was intended to apply to heavy belts coming up through the floor, or in such a position that a real element of danger existed. It has been found by long experience that in such machines as milling machines, gear cutting machines, etc., to guard the intaking side of the belt, so that the hand or arm cannot be drawn in between the belt and pulley, practically provides a sufficient guard. Allowing the use of this construction is interpreting the law to the effect that there shall be no danger point within six feet of the floor, and with this interpretation the spirit of the law can be carried out without the hardship which would result from endeavoring to adhere to the letter.

It would be a great help to manufacturers if a uniform code of laws in all states could be enacted, dealing with the matter of mechanical guards. The work of the National Safety Council and the American Museum of Safety is helping in this direction. It needs constant watchfulness to head off unreasonable though well-intentioned legislation. I understand that an effort is now being made to introduce into the New York Legislature a measure to make the manufacturer of machines responsible for accidents occurring on his machines wherever they may be in use. The complications and injustice which might result from the interpretation of any such law need but to be stated to be appreciated, and good sense will probably prevent such a law getting very far on the way towards adoption. On the other hand, it is perfectly feasible that it should become a point of advantage, in the competition of rival machines, to emphasize and use as an aid in selling, the fact that the machines are better guarded than those offered by a competitor.

Some rules of guarding on machine tools which have now become well established might be mentioned, as follows: All exposed gearing and the intaking side of driving belts except where very light service is required, should be guarded on all types of machines. All projections on revolving parts, such as screws, chucks, etc., if they cannot be avoided, should be guarded. In lathes, the back gears and feed gears should be completely guarded, and mechanical means should be provided for shifting the belt, where a cone pulley is used. For grinding machines there should be guards amply strong for the grinding wheels. A code for the mounting of grinding wheels has recently been given to the public by the American Society of Mechanical Engineers. Punch presses should be provided with guards to prevent the operation of the machine while the workman's hand is in the danger zone, or provision made and strict rules enforced to prevent the hands ever being placed in the danger zone. This brings us to the consideration of where safe methods can be used, even if necessary hazards exist. It has been found that a large proportion of punch press work can be done by methods which do not require the placing of the hand between the punch and the die. Among the methods which have been found satisfactory for small work are the use of tweezers, with the points specially shaped to hold a given kind of work. The use of chutes to slide the work into place and a stick with a wad of cloth on the end to remove the work. The use of a sliding die bed so that the work can be placed in position out from under the punch, and then brought back into position for the operation. It has been found that in most cases the same speed can be obtained when a workman becomes skillful in using these methods as when putting the hand in the danger zone, and where the discipline is such that the rules are observed the danger is entirely avoided. The same may be said of means for avoiding the danger of catching the fingers between the cutter and the work, in milling machines, such accidents being of most common occurrence when wiping the chips from the cutter with the finger. The providing of brushes for this purpose and insisting on their use eliminates such accidents. Here, again, the matter of discipline is at the root of real safety because the temptation to use the finger without finding or picking up the brush is always present. The attempt to use guards over the cutter, while in some cases possible, has often been found to be more dangerous than where no guard is used, and here would be a case of special hardship if the manufacturer of the machine was held responsible for accidents.

In regard to the non-mechanical hazards, we will first consider physical accidents, such as falling, being struck by flying objects, burns, etc. The importance of this division is shown from the fact that at the works of the Brown & Sharpe Manufacturing Company during the year 1915, 88.2 per cent of the reported accidents were non-mechanical accidents, principal among which were accidents due to falling, either on the part of the workman, or to something falling on or striking him, cuts with sharp instruments, eye accidents from flying particles, burning accidents from molten iron, etc. A very large percentage of these accidents was due directly to carelessness on the part of the workman. It is in many cases very difficult to decide whether or not an accident is one occurring within the works, and for which the shop is responsible. Among these are many eye cases, where, after a man has had trouble with his eyes for a number of days, he thinks he may have been injured in the shop. Cases of this character have often resulted in loss of sight of the eye, and there is no positive proof as to the cause. Another case frequently subject to doubt is that of hernia, where, without previous physical examination, there is often a question as to what extent this affliction is really due to a shop accident.

Where great organizations like the National Safety Council are devoting the time and attention that they are to the discussion of the subjects of medical inspection, occupational diseases, pure air and drinking water, model sanitary conditions, good light and cleanliness, it is not thought necessary to more than mention these subjects in this discussion, although they are of prime importance as reducing machine shop hazards. One point, however, in particular might be mentioned, and that is the danger of infection from cutting oils in use in the factory. There seems to be a divided opinion as to how easily infection may be carried through this channel, and there are those who advocate sterilizing plants to insure against infection from this cause. Some investigations carried on by the writer, with a variety of oils used in different parts of the factory, and in both summer and winter weather, did not disclose any bacteria which would cause infection. It is believed that more data should be obtained regarding this matter.

There is no one means which, in dealing with machine shop hazards, can in any way equal the work of education, the instilling of the spirit of safety into the mind of the workman, and making him feel that it is worth while, and part of his employment, to be careful, and to see that others working in his vicinity are also careful. This result can often be brought about by competition between different departments. Such competition is produced by giving the relative standing of departments and comparing their standing in previous years with their present standing. To make such a plan fair to all a handicap system must be used, so that a large and dangerous department is not at a disadvantage as compared with a smaller department where the danger is less. No one method can be recommended to the exclusion of others, it being the best plan to give constant variety, so as to stimulate the interest of the workmen. Means of doing this are found in changing the notices on the bulletin boards at frequent intervals, and in other ways presenting the matter constantly from new angles in order that interest may not die out.

Every step taken to reduce the turnover in the factory so as to have fewer inexperienced workmen is in the direction of safety. Figures show that often, in spite of all efforts to reduce accidents, a great influx of new employees will increase both the accident and sickness hazard, and an analysis of the figures shows that these new employees become a burden and bring up the rate, even when conditions are steadily improving among older employees, so that whatever is done to keep the force stable will directly reduce the machine shop hazard.

MR. CLARK: The next gentleman that will entertain you is Mr. Albert S. Regula, of the American Museum of Safety, who will speak to you on the subject of "Woodworking Hazards."

WOODWORKING HAZARDS

BY ALBERT S. REGULA, AMERICAN MUSEUM OF SAFETY

Before I start on my topic, I want to say just a word about the problem that Mr. Burlingame spoke of in connection with the pictures, and that is the spitting problem in the plant. The Ford Motor Company has solved that in a very simple way by simply painting the corners white. The men won't spit there, they see the effect.

Woodworking hazards is a subject that probably most of you are more or less familiar with, because of the fact that there is scarcely an industrial plant that does not have a carpenter shop or a woodworking shop.

A tabulation made by the New York State Industrial Commission, covering a three-year period, shows that woodworking machines caused 6,336 out of a total of 45,699 injuries, or 13.6 per cent of all injuries on working machines. Saws alone were responsible for 3,798 injuries, and 27 of the 79 fatal injuries due to working machines. In 1913 and 1914 a special investigation of industrial accidents was made in a considerable number of cases by factory inspectors with reference to the question of guards which revealed the following significant facts: That 48.3 per cent of the accidents occurring on saws happened in spite of the fact that guards were used; in 16.4 per cent of the accidents the guards were provided but were not used; in 7.7 per cent of cases the guard was considered not practicable and in 23.6 per cent of cases the guard was practicable but was not provided at the time of the accident.

Of the accidents occurring on jointers and planers 44.8 per cent happened in cases where the guard was used; 27.6 per cent where the guard was provided but not used; 3.8 per cent where the guard was not practical, and 21.9 per cent where a guard was considered practicable but was not provided at the time of the accident.

Unfortunately, the tabulation does not indicate the particular physical conditions existing, or the practices, perhaps hazardous, which may have given rise to so high a percentage of accidents in cases where guards were used. Aside from the fact that the figures would seem to indicate that our knowledge of practicable and effective safeguards is still elementary, I believe that we are justified in drawing the following conclusions: First, that employers are in need of education with respect to the necessity of providing, wherever possible, efficient safeguards for woodworking machines. Second, that the education of the workmen with respect to the necessity of exercising all possible care and caution in their work, and the need of utilizing to the fullest possible extent such guards as are provided, is of paramount importance. Third, that greater consideration should be given to the general physical surroundings and the proper adjustment, inspection and care of all working machines and equipment.

It is, of course, absolutely impossible for me to consider in detail each of these various factors and I will therefore confine myself to a few general remarks regarding physical conditions and the essential elements of safeguarding. The education of the workmen and the various methods of securing their co-operation and interest in safety has been discussed to some extent during the congress, so that I can disregard this phase of the question in this paper.

One who is familiar with woodworking operations has often noticed the slippery conditions of floors around saws, jointers, shapers, and other woodworking machines, and can readily understand what the result may be should an operator slip or fall while working in their vicinity. This danger should not be permitted to exist, and may be readily taken care of by providing non-slip material around such machines.

It is absolutely essential in all woodworking plants that there should be no crowding, either of the machinery itself or of the material to be worked. All material should be carefully piled, so as to prevent a single piece, or perhaps the entire pile from toppling over.

Particular attention should be given to the clothing worn by workmen. Ragged sleeve ends, loose fitting or unbuttoned coats or jumpers, often catch on moving parts of machinery and cause serious accidents. The use of gloves when working about machines should be discouraged.

Loose pulleys and belt shifters with some form of locking device should be provided for all woodworking machines so as to prevent the possibility of accidentally starting up a machine while the operator is making repairs, oiling or cleaning up.

Under no circumstances should a man be permitted to operate a machine unless he has been fully instructed by the foreman as to the particular hazards attending its use. He should be made to realize the possibility of accident due to inattention to the work at hand. Woodworking machinery is of necessity operated at a high rate of speed, and the slightest distraction or inattention to the work at hand is apt to result fatally.

The first consideration in the matter of accident prevention due to machine operation should be, in my opinion, that of proper installation and attention to the matter of keeping the machine in proper working condition. Circular saws should be carefully inspected by experienced persons to see that they are properly set and run true, that the saw table when in position on the frame has a firm bearing, that the gauge is parallel to the saw so as to prevent a wedging action between the saw and the gauge, that the opening in the table for the saw is not too large, that the bearings and arbors are perfectly fitted and balanced and free from end motion, that the saw fits the mandrel and that the flange is equipped with an expansion device to keep the saw in perfect running balance.

In the operation of the jointer, greater attention should be given to keeping the guides correctly adjusted; care in the setting, use and inspection of the knives; and inspection of all bearings and journals to see that they are not loose or defective in any way.

Coming now to a consideration of safety devices in themselves, it is, of course, impossible to provide a guard which is adaptable for the various classes of work which may be performed on a single machine. There is, however, no doubt in my mind but that guards may be utilized to a far greater extent than at present, and that in many cases, while the guard may not eliminate the accident altogether, it will at least reduce the seriousness of the injury.

Circular saws should be, as nearly as possible, completely covered with a protective hood so as to cover the blade at all times. The hood should be substantial in construction, rigidly supported, and adjust itself automatically to different thicknesses of material. The hood should be so arranged that the sawyer will be able to see the line of the cut. In ripping lumber the use of a pusher is strongly recommended. An essential feature of a rip-saw guard is a splitter, securely fastened to the table, or to the frame, so as to secure perfect alignment with the saw blade. The splitter should have its front edge slightly thinner and the body slightly thicker than the saw blade. The splitter not alone serves to prevent the pinching and the binding of the wood, with its resultant "kickback," but also protects the off-bearer and the operator, should he reach behind the saw. Saws should invariably be guarded under the table so as to prevent possible injury to the sweeper, but strict instructions should be issued against cleaning up while the machine is in motion.

In order to avoid being struck by boards thrown back from the saw, as a result of pinching, the sawyer should avoid standing in a direct line with the saw. It is well for the operator to wear a heavy leather apron to protect chest and abdomen in the event that a piece is thrown back.

A rather ingenious device to prevent the operator from removing the guard from a motor driven circular saw, where the work is of uniform thickness, as in box making, consists of an electrical cut-out attachment, so arranged on the guard that the power is shut off if the guard is raised higher than is necessary to allow the desired thickness of work to pass through.

Swing saws should be provided with a cast iron or sheet metal hood guard over the top of the saw and extend down on the side on which the handle is attached. The greatest element of danger is the possibility of the counterweight falling and striking the operator by the set screw working loose, but a safety chain attached to the weight from an overhead support eliminates this danger. A limit stop should also be provided, so as to prevent the saw from swinging out too far. The rear of the saw should also be enclosed so as to prevent accidental contact, unless, of course, the saw is placed against the wall. The belt should be enclosed, especially when it runs near the handle.

The band say is considered one of the safest of all types of saws, as almost all the hazards connected with its use can be eliminated by the installation of mechanical safeguards. Both the upper and lower wheels should be completely enclosed in cast iron, sheet metal, wire netting or wooden housings, so hinged as to be readily removed to facilitate inspection and repairs. The return side of the blade should be guarded by placing parallel strips of wood on each side of the blade and running out far enough to cover the teeth. The working part of the saw should be protected by a sliding guard attached to the guide so as to raise and lower with it. This leaves the portion of the saw between the guide and table unprotected, but this section is usually covered by the material being worked.

The hand planer, or jointer, is an exceedingly dangerous machine to operate. A change in the grain of the wood, striking a knot, too heavy a cut or attempting to work a short piece may hurl the piece from the machine and throw the workman's hands into the knives.

The adoption of the safety cylinder head to take the place of the old square head will do more to prevent accidents, or at least to decrease their severity, than any known mechanical safeguard. It practically fills the space between the tables, so that if the operator's hands should come in contact with the knives, the injury, except in very rare cases, does not result in more than clipping the finger ends.

In addition to the use of the circular head, either of the sliding and rising type, or the automatic type, it is advisable to place a guard over the knives. In the automatic type the guard is pushed aside by the entering piece of stock, and immediately closes after the stock has passed through; while in the rising and sliding guard the stock passes under the guard and the hands over it. The automatic guard leaves part of the knife gap exposed just before the cut is started and just after it is finished, but it does not require that the hands be lifted from the stock at any time, as with the rising and sliding type.

Accidents on the jointer frequently occur as a result of the operator attempting to plane a piece that is too short to be held with safety, resulting in the piece tipping or kicking back and throwing the hands against the knives. Opinions differ as to the minimum dimensions for stock that may be worked on a jointer, but as a general rule pieces should not be less than fifteen and three-quarter inches long nor less than two and three-quarter inches in thickness. If smaller stock must be worked, a push block should be used.

The portion of the cylinder head back of the guide should be kept covered by clamping a piece of board on to the guide.

The shaper, or the variety moulder as it is sometimes called, is exceedingly difficult to guard because the work done on these machines is so varied in character and the material must often be guided by the hands close up to the knives. In addition, the knives revolve at a very high rate of speed in order to insure a smooth cut.

The majority of the guards used for this machine consist of a buffer or fender attached to the table, behind the spindle, which prevents the operator's hands from coming in contact with the knives should his hands slip.

The knives must be carefuly set, and securely fastened on their spindles to prevent their flying out. The knives and collars which hold them are sometimes grooved, thus insuring a firmer grip. Safety shaper heads or round safety cylinders are being used on shapers as on jointers. Then again, the knives and the heads are sometimes made in a solid piece, which of course does away with the danger of flying knives. This arrangement, however, is expensive as it is difficult to properly grind the knives.

In many large plants where exhaust systems have been installed to carry off the sawdust and chips, the usual practice is to make the exhaust hood serve as a guard, as well as to take away the dust. This combination of exhaust hood and guard not alone reduces the possibility of accidental contact with the dangerous parts of the machine, but also does away with the hazardous practice of brushing away sawdust and chips with the hand, which is a prolific source of accidents on woodworking machines. Then again it serves as a health measure, especially when working sandalwood, snakewood and many other tropical woods used in cabinet work.

In conclusion it might be said that what we are in need of in the matter of accident prevention in the woodworking industry, as in all others, is consideration of proper practice, as well as consideration of practicable and efficient safeguards.

Mr. Clark: It gives me great pleasure to introduce to you Mr. Naylon, representing the New York Telephone Company.

HAZARDS IN A LINEMAN'S WORK

By J. F. NAYLON, DISTRICT SUPERINTENDENT, NEW YORK TELEPHONE COMPANY

The accident prevention problem of the New York Telephone Company to-day is primarily one of educating its employees to be thoughtful and careful in the conduct of their work in order to avoid injury. This is particularly true of employees engaged in line work, which work naturally carries with it the greatest element of hazard. Up to about twelve years ago, outside plant conditions were such that there was an element of danger in practically all branches of a lineman's work.

Previous to that time it was considered good practice for the telephone company to occupy the top position on poles jointly used by that company and the electric light companies, which made it necessary for telephone linemen to climb between electric light wires when constructing new lines and repairing old ones.

The first real step in the right direction toward removing the element of hazard in work of this kind was that taken in the early part of 1905, when it was decided that there must be proper climbing space between pole pins on poles jointly occupied by the telephone and electric light companies.

It was soon found that this was only a step in the right direction and a short time later our present practice of having the lighting companies occupy the top position on jointly used poles was started.

The work of reversing construction throughout the telephone plant has been practically completed, so that there is now little or no danger of the workman coming in contact with electric light wires during the progress of his work.

This change, together with the replacing of open wire lines with aerial cable has resulted in making our aerial plant a safe place for our men to work.

The education of employees along "safety first" lines is being conducted in accordance with the following general plan:

1. The organization of accident prevention committees, whose duties are to investigate all serious accidents, pass upon safety suggestions, make recommendations to improve conditions that might cause an accident, provide the subject matter for illustrated and other bulletins, and such other matters as may be pertinent to the subject of accident prevention.

2. The distribution of bulletins, some illustrated, describing serious accidents that have occurred, the circumstances that led up to them, and how they could have been avoided.

3. A rigid periodical inspection of tools, and the consequent weeding out of tools that have become defective. This feature is simplified somewhat by the fact that the company now furnishes all tools used by its men, so that there is no difficulty in replacing defective tools. When the employee furnished his own tools, there was sometimes a difference of opinion between the company and the men as to what constituted a defective tool.

4. Periodical illustrated talks have been found to be the most impressive means of reaching the man most subject to injury. We have not found it necessary to draw on our imagination in any way to obtain pictures for these talks. In other words, no picture that we use is in any way far-fetched. The pictures might be classified under the following headings:

1. Pictures that are reproductions of accidents that have actually happened in the plant.
2. Pictures of conditions that have nearly caused an accident.
3. Pictures of dangerous conditions or practices that have been caught on the job during the regular progress of the work.

These pictures do not cover all of the possibilities nor are they intended to show in every case how a man should go about his job. I think they do show that there is an element of carelessness, an element of thoughtlessness or an element of recklessness present in almost every accident we have.

The man who carelessly injures himself or a fellow-workman is a more undesirable employee than the man who does an unworkmanlike job or who continually violates the company's rules. To my mind, there is no place in our organization to-day for the habitually careless, thoughtless or reckless workman. We should make every possible effort to reform him by pointing out to him the error of his ways, and if this is found to be impossible, work should be provided for him where he is not likely to injure himself or a fellow workman. If this does not appear to be practicable, it would seem to be for the good of all concerned, that he should leave the service.

Regardless of what division plant superintendents, district plant superintendents, and supervisors may undertake to do, they can accomplish little except they preach the gospel of "safety first." The big responsibility is up to the foremen and the men in the field. Without their co-operation, we will never get anywhere in our efforts to bring about a reduction in the accidents we are handling. With their co-operation, we will get the best of this big problem, just the same as we have gotten the best of every big problem we have tackled.

Foremen and men in the field can best show their co-operation by making safety their first consideration.

MOVING PICTURES

Following his paper, Mr. Naylon exhibited a series of interesting and instructive illustrations on hazards in a lineman's work. Stereopticon views showed how simple causes lead to serious accidents and what the telephone company has done to prevent carelessness. The dangers of unsafe ladders, imperfect tools and recklessness in working on poles, in homes and factories, and other places where telephone installations are made were graphically shown. Correct working positions and caution in handling tools, climbing poles, driving telephone auto trucks and motorcycles were illustrated.

THURSDAY MORNING, DECEMBER 14

Presiding Officer: Carlton A. Chase, New York Industrial Council

Mr. Stofer: Doubtless I should apologize for occupying the platform this morning. It shows what an unselfish creature I am. I want to get all that is coming to me, and still a little more. However, Mr. Chase asked me, in view of the emergency, if I would not aid him in explaining the unfortunate situation which deprives us of the principal speaker of the morning, or one of the principal speakers of the morning, especially in view of the fact that the other speaker has wired that his train is late. It occurs to me that there must be in the audience men who have in their own plants a fine safety organization, in full operation. I notice that Mr. Hansen's paper was for the purpose of advising us how to save money as a result of the operation of a safety organization. I confess that I myself would be very much interested to learn from Mr. Hansen how to effect a direct, immediate, tangible saving, and I hope the members of the Congress who are present this morning will enter into this informal discussion. My experience, or the result of my observation in our own plant, leads me to say that aside from the credit which you receive, perhaps we could not place our finger upon the direct, tangible saving resulting from the organization of a safety committee, or a safety organization. On the other hand, in these days of propaganda, these days of getting together and working in unison, and these days of co-operation, it is the intangible results which we later learn are of the greatest practical value. To my own personal knowledge our safety organization has, indirectly doubtless, increased the efficiency of many of the departmental employees, and as a result of that increase in the efficiency, resulting from the personal attention of the employees, who, from time to time, rotate back and forth, it creates a wider personal interest in the individual employee and he in turn is interested in his fellow employee and unconsciously they all become more vitally interested in the work which they perform from day to day. I wish I had taken the pains to bring some excerpts from the minutes of some of the meetings. Unfortunately I came up here to get light on this subject, and I can very readily see that I am not giving you very much light. At the same time I am not sparring for time, for I realize that to throw a subject of this kind right into the audience without any notice whatever, you gentlemen being all in the same position as we are, namely, coming here to seek light, that it requires a little time for you to get a comprehensive grasp of the situation. As Mr. Chase requested, I sincerely hope that some of you gentlemen will now tell us whether you have yourselves observed any direct, tangible saving, aside from the rebate or the credit as a result of the safety organization in your own plants.

GENERAL DISCUSSION

Mr. Chase: Now, gentlemen, I know there are some of you here who have some thoughts on this subject, and I hope some one of you will break the ice. I cannot quite agree with the thought that Mr. Stofer put forth, that he did not see where they had made a saving. Now I am sure they must have made a saving, if they had this organization in their plant. I am satisfied they have made it. It may be intangible, but it is there. Efforts along this safety line certainly make profit in the reduced expense you will have under the Workmen's Compensation Law, and if in no other way, it would along that line in the way of saving. Now, gentlemen, please do not be bashful this morning.

MR. KOHLER: I might say that I have been attending the Convention since Monday, and I have not heard any subject brought up which pertains to the credit given to the workman for the job well performed, or to the influence that is cast by the executive heads over their workmen. I mean to say by that that you take a superintendent who figures that a day's work is well done when he is through with a job, and when he comes in on the job in the morning he goes through the shop with a good word and recommendation to his employees, thereby radiating the same spirit through the shop as he has himself. If a man does a good piece of work and does it well, and one of the heads of the different departments comes up and says, "Well, John, that is a fine job," I mean to say that the same workman is going to go to work and do the job better than he did before. On the other hand, the executive head or superintendent that goes to work and is on the job night and day and makes himself part and parcel of the shop, and who gets to be a regular grouch, you cannot get a smile out of him any more than you could out of a hard shell clam, and he goes through the shop finding fault with the employees, he naturally brings the same spirit in the shop, and I do not care if they make cannon balls or flapjacks, he naturally cuts down the efficiency of the plant. The spirit isn't in the shop as it should be. The man that does a job well and does it efficiently, naturally expects to get a little credit for the work that he has been doing. I might also call the attention of the delegates here to apprentices in shops attending educational night schools, manual training schools. In Brooklyn there are about twenty of them, and they are within a half hour's ride from anyone's home, if he wants to attend them. We have a rule in our organization that an apprentice must attend a manual training school in the evening, along with his regular line of business, and we have our secretary correspond with the principals of the different schools and find out the progress these young fellows are making. The tuition is all free. At the end of four years he is supposed to get his card. If he has not had a proper attendance, he doesn't get a card and he stays there another year. And if he don't get a card then he goes out. I really think that the only way you can educate a man is from his apprenticeship up.

MR. CHASE: I would like to turn the gentleman's remarks a little more directly on the subject here, because I think he has touched a very vital point, namely, the influence of the proprietor and the superintendent and the foreman, all the way down the line, on this safety organization. After a good many years' experience in connection with shop work, I believe thoroughly in that principle which you have all heard of and I hope you all believe in, that the men who have the responsibility and have the leadership in the plant are the ones in the last analysis that determine the policy. And those of you who are proprietors, if you expect the superintendents to have the right attitude and to have this happy frame of mind that the gentleman has just spoken of, which goes a long way in this world, you have got to start it for them, and they in turn must pass it along down through the foremen. If you want your men to be careful and to exercise their ingenuity towards safety lines, you must make them understand that you believe in it yourself. In that way, and that only, can you ever install the proper spirit in your men. You won't have any better men under you than you are yourself, for the good men will leave and find some one else that they like better to work for.

MR. C. K. MALLORY: I would like to ask one question. That is what scheme have they for carrying out the suggestion and recommendations of the various committees. That is, when they get their committee together, and recommendations are made, I presume these are recorded in some method, how do they follow them up. How are these recommendations carried out, and do they report back to the committee, or what procedure is followed.

F. M. HART: It has been my privilege to install about twenty-five safety committees in different factories. As to how to save money by installing a safety committee, I came down to hear Mr. Hansen tell that, myself. The only way that I can see you can save money is through the compensation insurance. The additional saving of money might come through the committee in making their inspections throughout the plant, in finding something which results in a better production. I have found this in several cases. They have made recommendations which have tended to improve production in the plant in connection with their inspection for safety. I do not really know what to tell you without going into a lot of detail in regard to these safety committees, but it is my impression that there are a good many companies that are not getting this full credit for safety. I am quite sure that is a correct statement. I have secured it for a number of our companies, the maximum saving, and there are some that get all the way from 1 to 8 per cent credit. If there is any one who cares to ask any questions I would be glad to answer them if I can.

MR. C. H. THOMPSON, Eastman Kodak Company: I am not prepared to answer the question regarding what saving has been made in our plant through the installation of safety committees, so far as we are concerned. Our idea in instituting the safety campaign in our plant was not to make a monetary saving, but since we have started that campaign we have made a reduction of 81 per cent in accidents, and that is the saving we are after. Another question was asked regarding committees making their reports. I would like to state that the way we carry out our reports, is this: Each committee makes a weekly inspection, and we have printed forms, tabulated, so as to show the number of the building, the number of the floor, and the section number of the factory in which any defect is found. That enables us to locate a defect quickly after it is reported. Then on the claim for defects, the committee write out whatever fault they have found, giving the number of the machine also, if it is in connection with a machine. It is then sent down to the office and five copies of that report are made. One copy is sent to the general superintendent and another to the superintendent of construction. The safety inspector keeps one on file. Another one is posted on the bulletin board, and the other copy is returned to the committee. These five copies are made after the several defects have been investigated, and on the column for "Action taken," is shows exactly what has been done in each case. If it has been found inexpedient to make any alteration recommended, it states on this report why the suggestion has been turned down. And in that way the committee, when they make the following week's report, taking this copy with them, see exactly what has been done. Those items that are recommended go to the General Superintendent and he O. K.'s the items that he considers should be attended to, and we have only had out of some 4,000 recommendations about eighty-six which were turned down. The others were worthy of consideration and attended to. I feel rather nervous about going into this thing now, because Mr. Robertson will be here this morning and I do not want to encroach on his ground. I would like to say, however, that we get as many people on this safety committee as possible. We have seven floors, and one committee on each floor, consisting of three of the employees, sometimes two men and one woman. We have these seven floor committees, and then there is a general floor committee of three, who make a general inspection of the whole plant, so that there are eight reports coming in each week, and very little escapes these committees. If possible, on each committee we will place a knocker on the safety question. As a result we get his interest and his co-operation. Now in dealing with employees along safety lines, we have found that it doesn't pay to sugar-coat the pill in any way, but we must come right out and call it safety work. These few points regarding this I simply make in reply to the question of this gentleman over here, who asked regarding the way of handling the different recommendations when the order is placed for these different items to be attended to. We have a follow-up system, the same as we have in any other order passing through the plant.

Mr. Chase: May I ask Mr. Thompson to explain the effect of posting the suggestions of the committee; what is the real result of this posting of the suggestions made by the safety committee?

Mr. Thompson: The result is that all the employees see the reports that are being sent in by these committees, and they see the action that has been taken regarding their suggestions, and it also has the effect of pointing out to the employees of that department the defects that have been noted. There is a bulletin board in each department. We have a weekly Sunday inspection in addition, which is carried out by the safety inspector, and his report is posted also. We give credit for the cleanest department. It is a sort of a competitive system, between departments to show who can have the cleanest department and the least number of accidents. That has been very successful.

Mr. Chase: The effect is to educate all the other employees?

Mr. Thompson: That is the effect of it.

Mr. ————: Have you any members of those committees outside of those who work on the floor? Do you have any one on that committee except employees on that floor?

Mr. Thompson: Committees are selected from that floor only. But once a month we change them around, so the sixth floor committee may make an inspection of the fourth floor, and so on, and we find that effect is very good, because they get in the other departments and they see what they can get on the other departments, and we have some very good results.

Mr. ————: You won't have a sixth floor employee on a seventh floor committee, regularly?

Mr. Thompson: No. As soon as the committees are appointed, we hold a meeting of the committees, and they receive their instructions and they are told they can make their inspection whenever it is convenient for the three of them. They can go around any day or any hour they select, and we don't limit them. We think that a couple of hours is sufficient to make a good inspection, but we tell them they can take their time, and we never have the thing abused at all.

Mr. ————: How do the committee meet?

Mr. Thompson: They meet when they are first appointed, at the beginning of the month in the committee room, and then whenever we want to draw their attention to something through the month. But each committee acts independently, unless they are called together in the committee room. The chairman of each of these committees, by the way, has the privilege of getting his committee down there in the committee room for the purpose of discussing some point that they want to make in their report.

Mr. ————: Do they have a regular meeting outside of the first?

Mr. Thompson: No, there is no regular meeting. The foremen's meeting is held regularly every second Tuesday. They meet every second Tuesday for the purpose of discussing not only safety matters, but matters pertaining to production and little difficulties that may turn up, and that is the only regular committee meeting that we have outside of the preliminary meeting of the floor committees on the beginning of the month. The reports are to be submitted by 10 a. m. every Saturday.

Mr. ————: And the inspection is made once a week?

Mr. Thompson: Yes, by each committee. If that inspection is made on Tuesday, the report comes in on Saturday, unless they find a condition that needs immediate attention, and then they send in a special report. That appears again on the Saturday report. They can send in a special report at any time they find it necessary.

Mr. ————: Do they take any action to correct the trouble?

Mr. Thompson: It is taken up with the head of the department. They consult the heads of departments in all these matters, and then an order is placed to help the thing to be attended to. Those orders are handled just as repair orders are handled, and taken care of in the ordinary routine.

Mr. H. H. Holmes, Collier & Sons and Employing Printers' Association: I am not in condition to make a very good speech this morning, but I thought it might interest the members of the Congress to know the way a smaller concern than the Eastman Kodak Company would handle their safety work. We employ nearly a thousand people. The shop is strictly union, throughout.

We have a safety committee of five members, and I am the only one of that committee who is not a union man. The reason for that is that I happen to have charge of a large department, or two departments, myself. I represent in this case the superintendent. There is one other person on the committee who is not a union member, and that is the floor walker, a lady. In addition to that, we have members of the pressmen's union, the bookbinders' union, and an expert mechanic. We meet as often as necessary. There is no stated time, but we never go longer than a month. In fact I think we never have gone as long as a month, without holding a meeting. The shop is divided up into sections, and each one of the persons on the committee makes inspections at least once a week of that portion of the factory assigned to him. Whenever we hold a meeting we keep minutes of that meeting, just the same as any organization of that character would. I believe a copy of the minutes, one copy goes to the superintendent, another one to the insurance company, the Aetna, and a third copy has to go to Albany. Now our method of handling recommendations of the committee is this: The superintendent, when he gets the minutes, which he does right after the meeting, passes on these recommendations. I do not know where he has turned any recommendation of the committee down. The superintendent has assisting him a "follow-up man." The follow-up man gets his orders in typewritten form, and is instructed to see that these recommendations are carried out. If it comes under the head of the construction department, an order is issued. If it is handled by the mechanics, a similar order is issued. When the work is completed the superintendent sends a report to the committee, and that is made a part of the minutes of the next meeting, showing that the work has been carried out. One very important thing, that seems to me would be interesting for many of those here, is that by having mechanics who are members of the union, co-operating and working on this committee, it has stimulated interest, and has made other mechanics, pressmen, bookbinders, etc., interested and they have come forward with recommendations on the floor where they are located. We have carried this on now about a year, and we find that the work is growing. The general safety work is looked after mainly by the welfare worker and myself. If there are any questions I would be glad to answer them.

Mr. Myers: Might I ask Mr. Thompson or the other gentleman if they have any difficulty in keeping their employees interested in the bulletin boards, and what means they take to do so.

Mr. Thompson: We try to maintain, if possible, what we call a good live bulletin board. I do not mean by that cockroaches crawling over it. But we change the subject-matter on the bulletin boards very frequently. Sometimes every other day. Sometimes we put new bulletins up every day. Perhaps we will let one which is interesting remain up all the week. We make many bulletins of our own by taking photographs of some wrong condition in the plant and putting up the picture. One of the things we try to do whenever we have an accident, no matter how small it is, is to get the victim of that accident at the same machine and under the same conditions as those under which he was hurt, and take a photograph of it, and we have yet to see the man refuse to do that. They are all very anxious to do it for the benefit of their fellow-workers, and we post that bulletin up and it attracts more attention than the picture of some accident in Kalamazoo or New Zealand. But this brings it home to them when they see one of their own fellow-workers on that bulletin and, in that way, we keep the interest pretty well up as far as the bulletin boards are concerned. Supplementing the bulletin boards, we have our shop magazine, published every two months. This also contains a lot of this information, and also the result of our suggestive system. When our committees make their inspections they are at liberty to use the suggestive system. They give their suggestions to the managers, and that is treated as entirely confidential. That is kept by the manager, and the suggestion goes into the suggestion committee, with an identification number on it, and then after the suggestion committee decides whether it can be adopted or not, the man is paid for the suggestion, if it is adopted. If not adopted he receives a letter explaining why it cannot be adopted. The suggestion is paid for, in amount from $1 up, depending on the value. We had a man make a very good suggestion and he received a prize of $1,000 for his suggestion. A girl noticed a small nail sticking out of a post. She raced for an envelope and put in that suggestion and made a dollar. The suggestion committee is divided up into five different parts. It is composed of the heads of departments, as a rule. As soon as a suggestion is received it is classed under any one of the following headings: suggestions on reduction in cost; improvement in product; general maintenance; accident prevention; improvement in manufacture or improvement in tools. Then on each of these heads they consider the suggestion and make their recommendation on a special form and send it back to the manager.

MR. JAMES A. MURPHY, Secretary, Bakers Union No. 30, Syracuse: This discussion is more or less informal, and I would like to offer a suggestion to the gentleman that I think will help him rivet the attention of his employees on the bulletin board, and that is to occasionally post a notice of a raise of wages, or a shortening of hours.

MR. THOMPSON: We have just done that.

MR. A. S. REGULA: On the question of bulletin board, it occurs to me that too often we lose sight of the fact of the proper location of that board. I have in mind a condition in one plant, which I had occasion to visit, in which the board was placed on one side of a square column with pig-iron piled up three feet high on each side, and you actually had to step in a trench in order to get to the board. The second consideration is that of properly illuminating that board so that it can be easily read, without getting close up to the window, and then that of the actual bulletins that are placed on that board. I also want to say just a few words on how to save money in safety organization. It has been pointed out that the organization of the safety committee itself results perhaps automatically in, we might say, a cash dividend in the form of a lower insurance premium. But then the actual operation of that committee results, as we all know, and as Mr. Thompson has pointed out, in the reduction of accidents, and in effecting a saving of money. In the first place we have efficiency. Now if you have a distressing accident in your plant you will always find that there are half a dozen fellows on the job ready to help out and assist the injured party. Those of you who saw the film of the National Association of Manufacturers last evening perhaps saw that visualized. While these men were taken away from their productive employment in attempting to administer first aid or assistance to the injured part, your overhead expenses are piling up. They don't stop. Then in case the accident has been a serious one and you find it necessary to replace that workman with a new hand, you have the time of the foreman taken up to instruct that new hand, perhaps in the operation of the machine, or perhaps in pointing out dangerous features connected with the operation of the machine. So there is the time of the foreman charged up against you. That may be saved by the proper safety organization and reduction of accidents. Then of course we all know that the new hand is bound to turn out scrap material. You have the scrap material and the seconds also charged against you, which of course can also be done away with by the reduction of accidents.

Mr. Fischer: There is one feature of inspection work which I don't hear touched upon, but I want to emphasize. We, in certain industries, while the shop committee will do a great deal of good, find it is necessary to make safety inspections by men of the highest intelligence in the company. We operate thirteen stations, gas, electric, steam, handling electric current from 60,000 volts down, and we have, in addition to our plant committee, committees of the most skilled electrical, civil and mechanical engineers on the job. They are combined with the principal superintendents and operating foremen, and they go over the properties in addition to our plant committees. We must always bear in mind, however intelligent and alert the plant committee may be to pick out the dangerous conditions, they do not always have the required knowledge; they don't understand the extremely intricate problems involved in our work. And I assume the same is true to some extent in other industries. So I believe we have to combine with the foremen and with the workmen themselves, a higher grade of intelligence. We cannot trust to the foremen and the workmen's committee, assuming that they are familiar with their own particular machine.

Mr. Schafer, Standard Oil Company: Our experience has been very similar to the gentleman who has just spoken. We have our shop organizations, but in addition to that we have our permanent safety committee, which consists of twelve members, it being made up of the heads of our various plants, not the actual heads, but the assistant superintendents and men directly concerned with the actual operation of the plants. This committee meets twice a month, and makes an inspection of the plant. The membership of the committee is so divided that each two or three men, in addition to having a general interest in all the work of the committee, have particular points which they are supposed to look after. In other words, two or three men look after the safeguarding of machines. Another two look after the electrical parts of the plant. Another two will look after the general welfare of the plant, the cleanliness of it. Another two will look after the boiler inspections. We have a secretary of this committee, and all the suggestions and recommendations of the various members are reported to this secretary. He in turn sends a copy of those suggestions and recommendations to the superintendent of the plant. If on our inspection we find any particularly bad features, poor buildings, dangerous electric lighting conditions, or anything that is glaringly wrong, a special report is made immediately, not to the superintendent of the plant, but to our manufacturing committee, and they go over the matter and, if they think it is of sufficient importance, they make a special visit to that particular plant and investigate the particular suggestions made. If in their opinion the recommendation or suggestion is well founded, they order an immediate fixing of the difficulty. When the superintendent gets these committees' recommendations, he usually goes over the matter with a member or members of the committee representing his particular plant. If there is anything in the recommendations to which he objects, he states his objection to the member, and he in turn takes the matter up at the following meeting of the committee, stating the reasons why the superintendent does not think it is a proper suggestion. If the safety committee in turn feels that the objection is well founded, their recommendation is withdrawn. If they still feel that the superintendent is wrong, they have the privilege of carrying the recommendation to the manufacturing committee and getting a final decision from them. I will say, however, that so far it has not been necessary to take any recommendations higher than the superintendent. All our superintendents are only too anxious and very keen to bring their plants to the highest efficiency possible. Now as to the good which we feel that this committee has done in making our various rounds, we can see an improvement each and every time. There is a difference in the appearance of the plant. I don't mean to have you infer from that that our plants were in bad shape. We have improved what we consider were good factory plants. It has also brought the various men in the different plants closer together, and it has brought about a friendly rivalry between the various assistant superintendents. Each one tries to see that his particular plant is kept in good condition, so that the committee as a whole can find very little on him. It has brought about good-fellowship. It has also brought about this, that prior to the installation and the establishment of the committee, a man might receive a recommendation and think: "Well, I guess I am all right, or that is a little bit more expense than I want to incur," but in going around and talking with the other members, he finds that he is just a little bit behind the times, and therefore he puts in a recommendation and suggestion with a greater amount of goodwill and good feeling than he would have done before. We also have reported to this committee the accidents occurring at each plant. Those accidents, no matter how trivial they are, are read to the committee at the monthly meeting. If we find any class of accidents occurring with great frequency, that matter is taken up to see whether or not something cannot be done to avoid those accidents occurring with such frequency. We have found that that has been a very beneficial thing. I do not think there is anything else that I can add to what I have said.

MR. J. A. TANSLEY: There is just one point I might add to the gentleman's system of safety committee work. In our factory when our safety committee reports upon the results of their inspection, that report is turned over to the safety engineer, and if he finds that there is any recommendation in that report that relates to an extremely dangerous situation, he does not wait to put it before the superintendent of the factory, or any other parties. He immediately checks up that inspection and if he finds that the conditions warrant the action, he immediately has the matter taken care of, and he so checks it on his report.

MR. SCHAFER: If there is any condition arises, such as the gentleman mentions, each member of the committee has the authority to go back to his plant immediately and have such changes made. The only point I made about bringing the large matters up to the proper officials was in case of a building that seems to be a little bit out of true, or a particularly bad fire risk may have been overlooked, which would involve the expenditure of probably thousands of dollars. Such matters even our superintendents would not have the authority to make, or incur such an expense without receiving the approval of the manufacturing department, or the board of directors.

MR. H. G. MEACHAM: Our method of procedure with reference to suggestions made by the members of the shop committee is precisely the same as our friend Mr. Tansley, of Niagara Falls, has mentioned, but there is one thing it seems to me the safety engineer ought to be particularly careful about, and that is what might be termed the psychological side of these suggestions. You can make a good member of a safety committee, or you can break a good member many times by ignoring a suggestion, because when a shop man makes a suggestion in regard to safety work, something that to him is important, something that may not be of much consequence to the firm, it is highly essential, it seems to me, that it should be carefully explained to that man why this is not a proper suggestion.

MR. FISCHER: We have gone a little further in some cases in that respect. We have put into effect suggestions which were absolutely on the border line. We could not see that they would do the company any good, but if a man goes to the trouble of making a suggestion we try to meet him a little more than half way, to encourage him, and if it is not too expensive we put his suggestion into effect. It is fundamental and vital that the man be made to feel that the manager is on the level. If you don't spend a little money for improvements, why you cannot ask men to think safety and talk safety for you.

MR. MCDONALD: I would like to get a little information along the line of our own work. Everything talked of this morning is among high class employees. Of course a cotton mill man doesn't compete with an Eastman Kodak Company. We have about 400 employees, and perhaps 85 per cent of them cannot read or write or talk the English language, and when it comes to selecting a shop committee of those people, we are up against somewhat of a difficulty. Of course we can select a foremen's committee, but when you come to select a shop committee of those people, who are just from Europe, who don't understand our language, who don't understand the machines or anything connected with the factory, you see we are up against difficulties, and I would like to hear from some one this morning who have those people in charge, how they handle them, and how they get a shop committee from these folks. I am not getting any information along the line I suggest, and I would like to ask if there is some one here who has such experience.

COMMISSIONER LYON: Of course we have all been feeling through this whole Congress that really the humanitarian element is perhaps more important than any other, and that what goes to minimize the suffering and pain of the workmen is of great importance, but Mr. Murphy, I think, has overlooked the fact that that is not the particular thing before us this morning. The subject that we are discussing is how to save money by installing safety devices. Now to confine yourself to that subject and focus attention upon the saving of money, when that is the thing before us, is not by any means to forget the very fine thought that Mr. Murphy has in mind, that after all there is something higher than money to be sought. The point is that just at present we are focusing our attention on something else.

MR. MURPHY: I think my remark was perfectly in order, for this reason: To begin with, the chairman announced it was an informal discussion, and secondly, this speaker below me said that where working men make suggestions, sometimes they are really of not much monetary advantage to the firm, but they should be brought into the main office and made to feel big, and all that. That is the idea, Mr. Commissioner, that I object to. I do not believe in trying to put anything over on him, no matter what he is.

MR. CHASE: Mr. Murphy, I am sure that the gentleman has nothing in his mind except the welfare of the whole organization, not only the company, but the men in it, so that I think we can pass it as one that we all agree upon. Is there some one here with a smaller shop that has experience along this line that the gentleman inquires about, where the shop has a smaller number of men, and perhaps more or less of an element of foreigners, that can give us some advice along that line?

MR. PLATTE: I wish to say that we are up against the same proposition, at the Oswego knitting mills. We have a payroll of 12,000 people, and it is safe to say that 40 per cent are not capable of understanding the English language, either written or spoken. We have had this matter of safety committee before us for some little time, but have taken no action because we have not been sure the best way to go at it. I would be very much interested in getting some information on this same matter.

MR. HECKMAN: In connection with this problem of safety organization among the foreign element, if the number of the various races represented in your plant is not too great, it is of course feasible to have one representative for each nationality on your committee. On the other hand, it may possibly be that there are so many nationalities represented that in order to have a representative on each one, your committee would become cumbersome. Perhaps one of the best ways of solving that problem is to get a man from each nationality who is a safety enthusiast, who is a booster for safety, and let him go around among his own men, either in the plant or on the outside, and let him talk this safety stuff to them. Let him line up the men of his own nationality in this safety work. In other words, if you get an Italian who is a real booster for this safety work, you are pretty certain that he can line up the other Italians in the plant. In the organization of a committee, it is, of course, best to have each nationality represented, if possible. And then, again, if your plant is a very large one, the employment of an interpreter who is able to interpret for the men the rules and regulations set down by the committee is desirable.

MR. FISCHER: We have very few employees, and probably there are not more than a hundred who are not Americans. We have two methods. One is, we distribute pay envelopes with instructions printed in Italian. The other is, we attempt to reach them through our bulletins, which we send to their homes, on the theory that almost all of them have children who can read English, and the idea is that the safety literature going into the homes will some of it soak through the children into the parents.

MR. AUSTIN: I have been listening this morning to see if there was anyone here who could report a direct saving as a result of the safety committee work. I think I can report a direct saving. Those of you who are familiar with a blast furnace realize that it is a pretty dirty, rough-looking place, as a general thing. Before the safety work was put into effect in our plant we kept a gang of laborers cleaning up. That is, cleaning up after the different departments. Our carpenters would go and do a job and finish the work and leave all the shavings, etc., there for the gang to clean up. The same with the rigging gangs. Now each department takes care of their own cleaning up and the result is we have been able to eliminate the labor cleaning gang. In other words, we have practically cut our labor gang in half. Another saving that we have made, although small, is we used to keep two men doing the glazing around the plant. Now each department looks after that, with no added help. So I can report a direct saving in this line.

MR. BORDEN: There has been a whole lot said about this safety and factory committee. So far we have only heard from the large concerns, whereas the great majority of the American workmen are employed in factories ranging from 50 to possibly 500 and they are not in a position to carry out some of the elaborate systems. Still they want to safeguard their men just as well as the rest of them. The main point seems to focus on the direct saving to manufacturers. So far there has no direct saving been shown. It is an indirect saving, a saving in life. All the points pointed out are indirect, but it can easily be made a direct saving by the management of that particular plant by giving the safety committee instructions not only to look out for dangerous machinery, shafting, gears, and so on, but also for the waste which they may detect. Now, for illustration, although I thought that in a certain place I am speaking of everything was done to save money, on the last inspection the safety committee reported that some of the men used machines which were connected with a blower system, which carried all the waste into the boiler room, and the men were not shutting down the blower when they shut down their machines, and therefore wasting money, because the harder the blower has got to blow the more power it takes to blow it. And there was a saving. In that way, I believe, the safety committee can accomplish many things if instructed on that line.

MR. CHASE: We have with us Mr. John A. Robertson, General Manager, Camera Works, Eastman Kodak Company, and he is to speak to you this morning. I am sure we will all get some valuable suggestions.

PRACTICAL BENEFITS DERIVED FROM SAFETY ORGANIZATION

BY JOHN A. ROBERTSON, EASTMAN KODAK COMPANY

Before I start on my regular subject I want to congratulate the Industrial Commission of the State of New York on bringing about this Congress. I exceedingly regret that I have been unable to be here for the last three days.

But this safety proposition has got to be worked out by co-operation, and the Industrial Commission in asking the manufacturers and the workmen to meet with them here and discuss these problems and co-operate on getting practical laws and practical methods of preventing accidents, is one of the greatest steps in advance that any Labor Department or State Commission has ever attempted. Furthermore, I am authorized by the Rochester Chamber of Commerce, and the city officials, in addition to the printed invitation which they have distributed here this morning, to personally give all the delegates to this Congress, and to use my best influence with the Commission that if it is repeated next year, that they bring it to Rochester. We believe we have got a good, live, safe, beautiful city up there, and we want you all who have not visited it, to come and visit it, and we can show you some of the work we have done in safety and along other lines. You will be heartily welcomed in Rochester, if you can see your way clear to arrange to come there. Now if any of the delegates here expected a long-whiskered scientist to read a dry scientific paper this morning, they will be disappointed, because I never read a paper but once in my life, and that was on compensation, before the Rochester Chamber of Commerce, and it was published in the newspaper. The next morning a friend of mine says, "Who wrote that speech you had in the paper? I liked the one you gave a great deal better."

The subject that is assigned is Practical Benefits Derived from Safety Organization. Maybe you won't agree with what I am going to tell you, and maybe it is not logic, and maybe it is not systematic, but I am going to try and illuminate it with a few interesting examples of what can be accomplished by safety organization. I heard a new definition for organization the other day. One of the western stage drivers was driving his stage up a hill, and he had a passenger sitting on the seat with him, and the passenger noticed the skill with which the driver could flick a fly off the horse and never touch the horse, and he remarked on his skill. About the time they reached the top of the hill the passenger looked up and saw a hornet's nest, and he said: "Why don't you try your whip on one of those hornets?" The driver replied: "Not on your life, they're organized." Now we don't get much in this world individually. The individual cuts a very small figure in anything, and it is only by co-operation and organization that we can accomplish anything in safety or any other direction. Primarily it seems to me the benefits derived from safety organization are fourfold, the human, the economic, the educational and the co-operative. The human idea must be at the basis of all effective safety organization. If the man in his heart and soul does not take an interest in his workmen, or the people associated with him, and does not honestly intend to do things for their benefit, no matter what organization he creates, or no matter what the machinery is he accomplishes it by, he will not secure 100 per cent result, or anywhere near it. He must have a personal, real-hearted interest in the people with whom he is associated to gain the results. The best illustration of that that I ever heard of was by the President, I think, or some member of the Teamsters' Union in New York City, before the Civic Federation some few years ago. It was when the question of compensation was being discussed, and he made his remarks, and he made them very emphatically and from the heart. He said, "The superintendent whom I am working for carries insurance and provides hospital treatment for all their horses. If one of them is hurt it has attention, the best possible care is given it. But if one of the drivers is hurt it is left for the public ambulance to pick him up." He said, "If the chauffeur of the man I am working for was hurt he would get the best possible attention." He said, "There is a man doing the humane thing with his expense account but not doing the humane thing with his income account." In that remark of his we have stated this safety proposition, and we must realize it is not only a humane thing, but is a good business proposition also. I never dwell very strongly on the economic side, because it is a result of a practically demonstrated proposition. If the thing is fundamentally right, basically right, it must be economically just. When I came in I heard a gentleman saying something about no concrete evidence having been given of the economy of this proposition. I may have misunderstood him, but it just flashed into my mind that maybe you would be interested in actual figures. This is not any theory. It is actual figures. When we first started our Safety Commission in 1910 in the factories we had 3,755 employees. During that year we had 412 accidents. Now an accident may mean a lot of different things, but we started out on the basis that an accident meant anything that caused loss of time or required medical attention, which is practically the same basis as the Commission is working on to-day, so that the comparison for the five years is a fair comparison. These accidents are not all compensatable accidents. Not over one-third, I should say, were compensatable, but these are the ones that we report to the Commission. In 1910 we had 3,755 employees and 412 accidents, or an average of 109 per thousand. We commenced our safety campaign in that year, and the next year, with an increase of employees to 4,311, the accidents were reduced to 309, or the per thousand ratio of 71.68. In 1912 the employees increased to 5,500, and the accidents to 341, or the percentage per thousand of 61, and so on down, until 1915. I am not going to read you all the figures because they become tiresome, but last year we had 133 accidents with 6,094 employees, or a percentage of 21.83 per thousand. The net percentage of reduction in the five years was 80.10 per cent. I will leave it to you if that is not a practical demonstration of what organized effort can do. Then further, on the economic side, two years before the Compensation Law went into effect we canceled our liability insurance and established a compensation scheme of our own, payment after the first week, and in those two years in which that was in effect, before the Compensation Law went into effect, we saved a good proportion of our insurance premium. The Commission has permitted us to continue to self-insure, and for the year of 1915 our actual cost of conducting our own medical department and paying our own compensation, is just about 50 per cent of what it would have cost us, the best rate we could get in the State Fund, mutual or stock company. That altogether amounts to approximately $25,000. That is a pretty concrete example that it pays to take care of accidents, and of the economy in the proper organization. Now on the educational side, the employer, be it an individual or corporation, alone can do comparatively little, except that he must show his natural, intensive interest, that he is going to give this the same attention that he does to his sales ledger and his cash account, and he must have reports on the results, and vitalize and visualize these figures. The thing that is nobody's business is never attended to, and unless it is taken care of, systematic accident prevention will not decrease accidents. Now that requires the education, first, of the superintendent, the foreman, and then the men themselves. The time is past in this country when we can do things by force. You cannot make a man better by law, or you cannot make him use a guard by law, only when you are looking. The problem is to educate them so they will want to do it. Bring it home to them that they are the ones that are going to suffer. It is their wives and their children that are the greatest losers in the end. It takes time to get that spirit throughout the organization. It takes years, but you can do it. Just as soon as you put something up to these men to do, when you appoint the three men on a committee in a certain department and say: "Now, here, we want you to report any dangerous places, or any machines that are not guarded, and we are going to pay you for calling them to our attention," the man looks at it from an entirely different point of view. He says, there is something to this, and gradually he responds to the proposition and very soon he becomes used to it, and in a very short time he becomes an enthusiast. Now that educational propaganda is the most important of all this safety work. It is necessary for the employer, as an evidence of good faith, to be consistent. He must spend money and he must guard machinery in the latest and best methods. After he has done that, after having been known by all that are working for him that he is on the level, then it is a question of bringing the educational point of view, so that the man thinks and feels and smells safety, so that when he crosses a street he involuntarily looks to the direction in which traffic is coming. Now that takes time to accomplish that spirit, but any of you who have not entered into this work, who have a thorough safety organization, don't overlook the educational necessities and the results of them. Now to-day it is not difficult for us to keep our plant safeguarded. In fact we couldn't do otherwise, because it is constantly being brought to our attention, day in and day out, by suggestions from the reports of the committee. And the result is that when it is investigated and we find that this particular machine or place is dangerous, why, we have got to fix it. You cannot face these men consistently if you don't fix it. And that is the spirit with which you can accomplish 80 per cent reduction in accidents. Now that has not only been a good thing in accident prevention work on our safety committee, for you know on this safety work you cannot have any argument with your employees. It is not a question of wages or hours. It is a question of human life, human suffering, and the conservation of human life and human limb. The result is that any honest man cannot differ with any workman in regard to accident prevention. It is good work and he is going to co-operate with you. I will pass on to the subdivision of co-operation, which I first mentioned. Co-operation which we secured in our safety propaganda has broadened out. It has gone into production, it has gone into wealth, it has gone into invention. There is no limit to it. You get a bunch who are willing and want to do things and there is no limit to what you can do. Nobody can win with a ragged, starved army. You have got to have intelligent men, you have got to have them well fed and clothed if you are going to fight a winning battle, whether it is in industry or war. And that sort of co-operation has very largely been produced from what was started as a safety movement. An illustration of that, one that was a surprise to me, was the savings bank proposition, which we put over at the plant with which I am connected. It shows the spirit of co-operation. About a year and a half ago we gave the employees the privilege of depositing from their pay, or setting aside from their pay any amount, and we would deposit it in the Rochester Savings Bank monthly and give them a deposit slip in their pay envelope in place of it. Between three and four hundred of the employees took advantage of this scheme. In investigating some of our sickness cases the necessity of laying aside a little something was brought strongly to our attention, and we gave a little thought as to how we could increase the number of employees who had savings bank accounts. We invited all the employees who had taken advantage of the system to a little dinner at 5:30 when the factory closed. We invited the President of the Savings Bank to come down and talk to them, and when he got through I told them a few funny stories, and showed them the statistics of foreign countries, and informed them that the United States was at the bottom of the list in regard to saving employees; that although the highest wages and best working conditions in the world existed in this country, yet the employees here saved the least. I suggested that they form a savings association, and asked the privilege of appointing ten committees of three each, to see if they could not increase the number of those having savings bank accounts. They gave me that authority and I appointed ten committees, and they had the privilege of electing their own executive committee of five members. We opened the campaign and it lasted until January 1st. The first week those fellows opened 741 new savings bank accounts. I couldn't have done it in a thousand years. Nobody in authority could do it. They saw the logic of the proposition, and they co-operated with it. To-day we have 74 per cent of the people that have got savings bank accounts. It is like one of Billy Sunday's revivals. They don't all stick, but if a few of them stick it is good work. We don't want to boost paternalism or charity or anything else, what we want to do in this safety proposition and every other proposition in this country is to show the men how to stand on their own feet, to be intelligent, and to have something laid aside for a rainy day, when they are out of work, or when there is sickness in the family. You can teach a man to be self-respecting, and to feel that he is not depending on every turn of the wheel of fortune, that he has got a little anchor in the way of a bank account, or piece of property. He is a better man for you and a better man for the United States.

Another very interesting concrete example of the result of safety organization. Maybe I am overrunning your time but I have got a few more things to say. I was one of the representatives from Rochester when the National Safety Council was originally formed in New York City three years ago. That organization has done wonderful work along educational lines. Their bulletin service is worth three times the money they cost to any man who wants to really use them. Shortly after that we organized our local safety organization in Rochester. We have got 100 of the best manufacturers there, representing over 40,000 employees. They got together primarily to reduce accidents, but the same spirit of co-operation has come through that and we find that we are discussing there questions relative to manufacture and greater efficiency, and instead of being a lot of dummies in not telling the other fellow what to do, we find we are broadening out and trying to help. But one of the best pieces of work that the local safety council ever did was the organization of the Grammar School Safety Council. The Board of Education co-operated with us to the highest degree, and they turned over their physical instructor of the Boys' Club to us, and we appointed a committee of five boys in each school. We gave them literature to distribute and take to their homes. Every month they met at the Chamber of Commerce, and each member of the safety committees had to tell about an accident that happened in or near his school, and how it could have been prevented. We offered medals and two silver cups for the schools giving the best essays. The boys took hold of it with a vim, and some of the most interesting safety meetings that I ever attended were those at which those boys came up there and related their experiences as regards the accidents which happened near the school. For instance, one kid said: "There was an accident down near our school. Some of the boys started snowballing a horse and cutter which came along, and the horse ran away and smashed the cutter up against a telegraph pole, but the man was not seriously hurt." He said: "If the boys had thrown snowballs at something worth while that accident would not have happened." And hundreds of instances of that kind were recited on Fire Prevention Day. I was asked to speak in four of the schools at Rochester, and I went down to No. 9 School. I had one of the silver cups for the best essay with me. We had 1,400 essays in accident prevention from those school children, and No. 9 School won the cup, and 75 per cent of the children of that school are foreigners and the children of foreigners. When I went down there these five boys of the safety committee were ranged up, and they conducted the meeting and they ran the fire drill, and they hoisted the flag and sang the Star Spangled Banner, and this little fellow introduced me, and we had a lovely time. But the principal told me the most interesting story a year ago last fall. This school has 1,970 pupils enrolled, and they have a trained nurse. The year before last there were 103 cases of injury from snowballing, which came to the nurse's attention. Not serious, but serious enough for attention. Last fall when the first snow storm came these five boys went to the principal and said: "We think we can stop the snowballing in No. 9 School." The principal said: "How are you going to do it?" They said: "We are going around and we are going to get all the kids not to throw any snowballs within two blocks of the school." In a few days they had them all signed up, but a few days after one of these boys commenced packing snowballs, and the safety committee fell on him and beat him. The result was that last year they had only four accidents in that school from snowballing against 103 the year before. That makes all our industrial records look like thirty cents. That is the work, to get that spirit of safety and caution into the children and they will take it home to the parents, and teach them the lessons they get at school. I have overrun my time, and I thank you for your attention.

Mr. Chase: Are there any of you who would like to ask Mr. Robertson any questions? I feel sure he would be glad to answer them. There is a thought that occurred to me, that was brought to my mind by the remarks of one of the gentlemen earlier in the morning, that those of us who have smaller plants sometimes feel that we are not in a position to develop the subject as the larger companies do, but we have something to be really thankful for, that we can get from these large concerns, who have the opportunity to work out their experiences and tabulate them and draw conclusions, the benefit of their experiences. And I want to say to any of you who have small plants, I have been connected with one for a great many years, and I know from my own experience and acquaintance with men connected with large organizations, that they would be glad to give you ideas. If you will just make a point, if you know somebody who is working on the safety problem and has deduced some facts, I am sure, if you will see them or write them, they would be very glad to give you all the help they can.

I have a telegram from Mr. Carl M. Hansen, Managing Director of the Pennsylvania Mutual Liability Association of Philadelphia, and I regret very much that he has not been able to get here this morning, as his talk would not only have been interesting but very instructive, on the subject "How to Save Money by Installing a Safety Organization." It has occurred to me that we spend a few minutes to good advantage discussing the topic, even without the guidance of Mr. Hansen's talk, and we will therefore take up the subject of Shop Committees and Safety Organizations in our respective establishments, and I am going to ask you all if you won't, particularly those of you who have had large experience along this line, if you won't give the rest of us the benefit of your experience. I hope you won't hesitate to speak right up, and see if we cannot get some real good. I know a lot of you have experience and good ideas, and if there are any who have any questions, I hope they will ask them and there will be some one here probably prepared to answer.

MR. A. S. REGULA: Mr. Price, in his talk the other afternoon, took up the matter of the organization of a safety committee, with some little detail. I think we all recognize, however, that with the foreign element, the foreign labor we have to deal with in our manufacturing operations, that the matter of providing on such workman's committee the place for an interpreter, or perhaps a workman who himself is in a position to interpret the rules and suggestions of that committee to his fellow-workmen is of extreme importance. So that in the organization of a safety committee, I think it is well to bear in mind this matter of the foreign element and provide a place on such committee for a foreign interpreter.

THURSDAY AFTERNOON, DECEMBER 14

PRESIDING OFFICER: R. C. STOFER, NEW YORK INDUSTRIAL COUNCIL

MR. STOFER: I want to ask your pardon for our seeming delay in getting under motion. I am quite decidedly in favor of prompt action, but the speakers, two of the speakers, this afternoon have films, and we necessarily had to wait until we could locate the operator of the lantern apparatus. At the close of this session the first Safety Congress of the State Industrial Commission will have passed into history. That it has been a phenomenal success is beyond peradventure of doubt. It has been deeply enjoyed by all. We are confident that it will do a vast amount of good. The lasting benefit of a gathering of this sort actually cannot be estimated. It is not accident prevention alone that claims our time and thought. It is preventive measures looking to the abolition, if possible, of the fearful industrial tragedies which have occurred in the past, the great amount of suffering, the intense sorrow, and the misery which resulted directly from inattention to the details which are now receiving the closest study of some of the most eminent specialists in the world. Without the co-operation of the Industrial Commission of our State we would not be nearly as far advanced as we are to-day. The beneficent law under which we are at present working and the personnel of the State Industrial Commission is responsible for this Congress, which I understand is the most successful which has ever occurred in the United States. I have been informed that over 700 people were present in this auditorium, I think, day before yesterday. When we consider that business men, men of affairs, men who are daily employed and necessarily incur a loss, men who have paid their carfare from various parts of this State and have traveled here from other States, devoting their time and their attention, for what? In order to aid or co-operate in evolving the safest methods of performing the necessary daily task. As the speaker said this morning, it is largely a question of co-operation, and very largely a question, of course, of education. Education is not possible in this case without co-operation. Nor is it possible in any instance. It is indeed gratifying to know that the workmen everywhere are intensely interested and that much of the prejudice of the past has been overcome. A few years ago it was no easy task to impress upon the workman the necessity of taking sufficient time to safeguard his own life and limb. And one of the greatest difficulties to-day, and the greatest difficulty which the safety committees encounter is the necessity of instructing, of educating, many men as to the importance of first caring for their own safety. Therefore it seems to me that it would be most fitting, before the close of this conference, that suitable resolutions be adopted, acknowledging our appreciation of the services rendered by the Industrial Commission, making possible this very successful Congress. Naturally, we must look farther than that. Had it not been for the care with which Governor Whitman selected the personnel of this Commission, they would not have passed this first milestone so successfully as we have, taking the milestone as this particular Industrial Congress. And as we look into the future we see a degree of co-operation which twenty-five years ago would have been considered impossible and preposterous. But we are learning not only to co-operate but to reason together, and the slogan of the future, the time when I hope we will never hear the words Capital and Labor, there is no such thing as capital and labor. We are all workmen, every one of us. We are all employees. I am an employee. All of us are employees. Therefore what we want to do is to co-operate. Come, now, let us reason together, in the slogan which wants to be kept in force, and it is the slogan which is going to solve many of the industrial difficulties confronting us to-day.

MR. GAFNEY: I am very glad in your short speech you paved the way for the introduction of a set of resolutions which I have here.

RESOLUTIONS

Whereas, The obvious advantages of the New York State Industrial Safety Congress have been made manifest during the past few days; and,

Whereas, Although the attendance has surpassed expectations, nevertheless there are many manufacturers and others interested in industrial safety who were unable to be present and who would appreciate and utilize the information adduced at this Congress; and,

Whereas, Many of the delegates at this Congress feel that the valuable data and information which we have received during our attendance here should be preserved and disseminated for the betterment of factory conditions and the conservation of the lives and health and comfort of the workers; therefore be it,

Resolved, That the delegates here assembled earnestly thank the New York State Industrial Commission for the inauguration and the successful carrying out of this first Industrial Safety Congress; and be it further

Resolved, That it be urged as the consensus of opinion of the delegates here assembled that the proceedings of the Congress be compiled and published and that the same be distributed within the means of the Commission, to all registered delegates and to such others as may desire them; and be it further

Resolved, That the delegates here assembled petition the Industrial Commission to take such action as may be necessary to make this Industrial Safety Congress an annual fixture; and be it further

Resolved, That the thanks of this Congress be extended to the press of Syracuse for the splendid reports of these meetings and to those who generously donated to the general cause their brains and experience and participated whole-heartedly in the program which has been offered here.

MR. HOLBRIGHT: I move the adoption of the resolutions.

MR. STOFER: In seconding the motion for the adoption of these resolutions, I would like to say a word in addition to what has already been covered by those resolutions. Perhaps, briefly, I might say a word, with your permission, of what my personal view has been of this meeting and its effects. Personally I can say that by and through the various deliberations which we have gone through here, I know that I am a more capable and better qualified safety man than I was when I came here. I think perhaps the most of us can truthfully admit this particular advantage. I might say that my experience with our Industrial Commission has been very gratifying. When the Commission first began to have suitable laws put through our Legislature, and issued various orders upon our factories and industries, perhaps some of you have had the same experience that we have in the industry in which I am connected, and that is, a series of orders or changes and improvements in the factory, perhaps an inch or more in thickness were issued. On two occasions, in looking over these orders and analyzing the conditions and in estimating what the expense would be, I found in cases that possibly there might be some method whereby the engineer on the job could provide, or plan another method of reaching these results. And in that way we analyzed the whole situation. This was done before the matters were brought before the knowledge of the company, so that when it became my duty to put these matters before the management I was prepared to say what I thought would be a counter proposition, and by my interpretation of the law would perhaps be acceptable. This, of course, led to a request for the Industrial Commission to give us a second inspection, or in other words, check up the local inspector, whose duty is that he report all conditions to the letter of the law. I found the Commissioners to be men who were very serious in this work. I must say that we have received prompt service and most courteous treatment and splendid help in bringing forth these various changes. In the first instance which I have mentioned to you, in the various recommendations, instead of our company having to pay thousands of dollars to make various changes, as recommended, we have only expended a few hundred dollars in acquiring the same results by and through our carrying these matters to the Commissioners themselves. On two occasions it has been my personal experience to be able to save several thousand dollars in meeting the requirements of the Commission staff's recommendations for an industry I am connected with. So that I want to leave the thought with you engineers on the job to be on the job. Don't be afraid of the Commissioners. They haven't got any horns on their heads. They are good, loyal fellows. Go to them and they will meet you half way.

All in favor of the resolutions will signify, please, by rising. Motion carried.

It now gives me great pleasure to introduce Mr. Louis B. Marks. On your program he is designated as being Consulting Illuminating Engineer, New York City. Mr. Marks is also Chairman of the Committee on Lighting of the Engineers' Society. Mr. Marks comes to us with the very highest credentials, and I am sure he has a message that is of vital interest to all of us.

FACTORY LIGHTING AND ITS BEARING ON THE HEALTH AND PRODUCTIVITY OF WORKERS

(ILLUSTRATED BY LANTERN VIEWS)

BY L. B. MARKS, CONSULTING ILLUMINATING ENGINEER

Time was, not many years ago, when the importance of good lighting as a factor in accident prevention, health conservation and increased productivity of workers, was not generally recognized. That time has passed. To-day every factory manager who has given the subject serious attention appreciates the fact that good lighting constitutes a safeguard against accident and undue visual fatigue of the workers, and is a vital factor in the economics of industrial plants. But unfortunately the recognition of the principle is often of little avail in improving the lighting of the factory because of failure to appreciate what good lighting really is. When an up-to-date factory manager tolerates bad lighting it is because he is unconscious of the defects. The human eye is such a sensitive organ that its efficiency is often greatly reduced by causes that one would least suspect. The real question then is, "What constitutes good lighting?" And this is the question that must be answered by the factory manager in considering the bearing of lighting on the safety, health and productivity of workers in his particular manufacturing plant.

Lighting that is suitable for one purpose or under one set of conditions in a factory may be quite unsuitable for another purpose or under a different set of conditions. For example: In most cases the lighting may be successfully carried out by lamps mounted overhead exclusively, while in some instances the overhead lighting must be supplemented by lamps placed close to the work. Again for some processes the color of the light of ordinary tungsten lamps is suitable, whereas for others special lamps having a particular light color value are required to give good results. Illumination that is entirely satisfactory when working on light-colored goods may be quite inadequate for dark-colored goods, and so on.

It is taken for granted that in no case should the eyes of the workers be exposed to an unshaded lamp.

No attempt will be made in this paper to define the principles of factory lighting which have been set forth in books and printed publications, notably in the Transactions of the Illuminating Engineering Society. My purpose is simply to call attention to a few points based upon my own practical experience, that may be suggestive to others in answering the question as to what constitutes good lighting for the particular purpose in hand.

Notwithstanding the remarkable development of lamps and lighting methods during recent years, the system known as "local lighting" is still extensively used in factories throughout the country. By this system I mean the plan of lighting by small lamps housed in opaque reflectors placed close to the work, without any general illumination of the room. This method of lighting results in what has been termed "spot lighting," that is to say, the portions of the work immediately beneath the lamp are brightly lighted; whereas adjacent parts are in comparative darkness. I have little doubt that many of those who use this system would be the last to do so on grounds of economy only, and that they believe this system gives the best results. Nothing could be further from the truth. A strictly localized system, of the type referred to, is inimical to the safety of the workers and its use results in eye-strain and consequent decreased productivity, to say nothing of spoilage due to faulty illumination of the work.

Observe the lantern view shown on the screen and compare the distribution of light obtained by this system of lighting with that given by daylight. In the daytime the work is evenly illuminated, whereas by artificial illumination carried out in this way, part of the work is brilliantly lighted, and the remainder either in dark shadow or only dimly illuminated. A very serious objection to this method of lighting is the glare that often results from light reflected back to the eye from the polished surfaces of the machine or work. This glare is all the more noticeable because of the darkness of the room.

Tests made by me several years ago on a typical lighting installation of this character in actual practice show the following:

ILLUMINATION DATA	Foot-candle intensity (horizontal)
Maximum intensity of artificial illumination on working surface of loom	19.0
Minimum intensity of artificial illumination on working surface of loom	0.2
Daylight intensity sufficient for the work	3.2

It will be noted from these data that one part of the working surface of the machine received almost 100 times as much light as another part. This variation occurred within a working space of only six feet and most of it within a working space of only three feet. The measurements taken when the same machine was illuminated by daylight showed that there was no variation whatever in intensity of light over the working surface of the machine. Subsequently when the localized lighting was replaced by a system of general lighting designed to diffuse and direct the light as illustrated in the view shown on the screen, the distribution of illumination intensity on the working surface of the machine approximated that of daylight.

A striking fact brought out by this test is that the portion of the machine directly below the lamp receives almost six times as much light as it does in the daytime when the daylight illumination is sufficient for the work. Obviously better results would be obtained if this excess of light flux on a limited area were distributed more evenly over the working surface of the machine, thus approximating more closely the distribution of daylight on the work.

Theoretically there is no reason why an artificial lighting installation cannot be made to give as good results as daylight. Practically the only limitation that stands in the way is cost. As the lighting cost in well planned installations is often as little as 1 per cent of the labor cost, this limitation is not as serious as might appear.

The fact is that in actual practice in factory lighting there are numerous instances in which well-designed artificial lighting installations are preferable to daylighting because of the inherent limitations of daylighting facilities. Take for example, the illumination of high-standing machines closely grouped in a room. It is difficult to light such machines well by daylight, either by side windows, or by skylights. Artificial lighting gives us an elasticity that daylight does not possess. We can locate our artificial light sources at will; we can control their intensity, quality and continuity.

In considering the bearing of lighting on the productivity of workers, we have a good illustration in the problem just cited, of the real question at issue, namely: What constitutes good lighting of these high-standing machines? If their illumination by daylight alone in what might be considered a well-lighted mill, be taken as a standard, then the factory manager may fall far short of attaining the maximum productivity of workers after dark because with artificial light it is possible to illuminate working parts of these machines much better than by daylight for the following reason: To see well the worker requires parts of these machines illuminated from below by well diffused light. Daylight is well diffused but does not penetrate the machine to the required extent. Artificial light on the other hand may be located underneath the machine to give the required diffused illumination from below.

In lighting from beneath by means of diffused light from relatively large surfaces of low brightness we have to do with one of the fundamental problems in the design of lighting installations, namely *contrast*. Intensity of light alone is not the criterion of ability to discriminate and see well over extended periods of time. One may have plenty of light well-shaded and well-diffused and yet not be able to see nearly as well as with less light differently applied. Contrast in surface brightness and contrast in color must be taken into account in considering the bearing of factory lighting on the visual acuity and productivity of workers. For example: it is almost impossible to adequately illuminate a warp of black threads in a loom unless there is a strong contrast between the brightness of the threads and that of the surface behind them. If means be taken to establish such a contrast by installing a light-colored sheet of metal or board behind the threads, the threads can be seen even though the candle power of the lamps used be greatly reduced. If now we go one step further and install behind the threads, a lighted trough having a large diffusing surface of low brightness, each thread can be distinctly seen and stands out clearly in silhouette against the light background.

This silhouette effect may be advantageously introduced in some of the processes in industrial lighting especially in textile work, and offers possibilities for facilitating good seeing that are seldom realized.

The importance of character (color and brightness) of the background in lighting factory operations often plays as important a part in effective illumination as it does in show-window lighting.

The exact extent to which lighting enters as a factor in the productively of workers is extremely difficult to determine because of the large numbers of variables that must be given consideration in accounting for any increase in production or any improvement in the quality of the work. The lighting problem is insidious,— perhaps even more so than that of ventilation. But this much is certain: without good lighting no factory can be operated at its maximum efficiency; without good lighting no factory manager can minimize accidents.

Ninety-one thousand accidents that occurred during one year in industrial plants were investigated by Mr. R. E. Simpson, engineer of the Travelers Insurance Company, who reports that 23.8 per cent of these were due directly or indirectly to lack of proper illumination. Of the 23.8 per cent, he states 10 per cent were due primarily to inadequate illumination, and that in the remaining 13.8 per cent lack of proper lighting facilities was a contributory cause.

To guard against accidents and at the same time to conserve the health of workers by giving them adequate and suitable illumination, the Department of Labor and Industry of Pennsylvania and the Department of Labor of New Jersey have recently adopted a code of lighting for factories, mills and other work places, in which intensities of light on the work are stipulated for different classes of work. It is specified that "the desirable illumination intensity to be provided and the minimum intensity which shall be maintained," shall be as follows:

	AT THE WORK	
	Minimum foot-candles	Ordinary acceptable practice
A. Roadways and yard thoroughfares	0.05	0.05 to 0.25
B. Stairways, passageways, aisles, storage spaces	0.25	0.25 to 0.50
C. Rough manufacturing operations such as foundry work, rough machining, rough assembling, rough bench work	1.25	1.25 to 2.50
D. Fine manufacturing operations such as fine lathe work, pattern and tool making, light colored textiles, tobacco manufacture	3.50	3.50 to 6.00
E. Special cases of fine work, such as watch making, engraving, drafting, dark colored textiles	5.00	10.00 to 15.00

In addition to the intensity of light required other regulations in this code cover general requirements, shading of lamps, distribution of light on the work, emergency lighting, switching and controlling apparatus.

One of the most trying conditions in lighting is that which occurs at the wane of the day when the natural light alone is hardly sufficient for the work. When artificial light is then supplied without shutting out the daylight, the mixture of the two lights of vastly different quality militates against good vision under ordinary conditions in factory lighting practice. Usually at such times better results are obtained by shutting out the daylight entirely. But with the advent of the modern high efficiency lamps that can be corrected for color value without prohibitive reduction of light-giving efficiency, we now have a means of supplying artificial daylight that in some cases may be advantageously mixed with natural light or used as a substitute for natural light where daylight color values are required.

Amplification of the foregoing statements and further reference to the question as to what constitutes good lighting will be made in the discussion of the lantern views which will now be shown. In conclusion I shall endeavor to answer any questions.

GENERAL DISCUSSION

MR. ——: I would like to ask if Mr. Marks knows how many thousand people in the United States are obliged to wear eye-glasses, if it is a pertinent question.

MR. MARKS: Yes, I think it is in a way a pertinent question. It is pertinent to the extent that improvement in artificial lighting conditions will naturally decrease the number of eye-glasses that are used provided the workmen do not work too hard and too long, but we are rapidly becoming a nocturnal nation, and I have sometimes said in answer to a similar question that I have some doubts as to whether the eyes of the operators are injured more by artificial light than they are by daylight. It is very difficult, indeed, to so locate workbenches and machines in any factory space so that none of the workers will be exposed to the glare from windows. The glare from windows in my opinion is perhaps more largely responsible for eye-strain than is the glare from the average artificial lighting installation, assuming that we eliminate a few of the very bad types to which I have referred. The reports on the use of eye-glasses have been worked up and described more fully in the reports of school hygiene. About a year ago the Chairman of the Standardization Committee of the National Safety Council investigated the cloak and garment workers' establishments in New York City. He took about a month to do so, and as I recall his figures, he found that something like 20 per cent of the workers wore eye-glasses. We found as the result of a rather extensive count in the United States Post Office, for which I designed the illumination years ago, that some 25 per cent of all the postal clerks wore eye-glasses. But I am not prepared to say just what part of that is due to faulty lighting.

MR. ——: I would like to ask if he considers full moonlight a sufficient light for outside passages and storage houses and places where there are no actual factory operations going on.

MR. MARKS: I do not.

MR. ——: Why?

MR. MARKS: My recollection is that under average conditions of moon lighting the intensity on the street surface would be .015 units. The minimum intensity required under the Pennsylvania code and the New Jersey code, which was prepared with the co-operation of our committee on lighting, is .05. In other words it is more than three times the amount of average moonlight intensity. Now that minimum was prescribed only after very careful examination of the requirements of yard lighting made by the Pennsylvania Railroad Company, or under their auspices, the requirements of dock lighting, the requirements of street lighting in residential neighborhoods that were not often used, the requirements of cross-country road lighting, and all that sort of thing. When you get below an illuminating intensity of 0.05, then you have not enough light to render the spaces to which you refer absolutely safe to be traversed.

MR. ——: What would you consider the minimum at which that would be safe for ordinary travel?

MR. MARKS: I have answered that question by stating that I considered the figure adopted by the Departments of Labor and Industry of the States of Pennsylvania and New Jersey as the minimum figure, which should be permitted, namely, .05 foot candles.

MR. ——: I believe we are all agreed on the difficulty of illuminating foundries, especially, and I would like to ask what your opinion is as to the most efficient method, or best method of lighting to be used to penetrate the dust.

MR. MARKS: I do not feel that I want to recommend any lamp or lighting device at this time. But I can say this, that at the time that flaming arcs were in vogue they were used very extensively for that purpose. The mercury arcs have been used very extensively for that purpose, and they gave very good results. Now as between those two you have a very striking contrast in color of light. The one is a golden ray, and the other is a greenish red, absolutely distorting natural color values. Both gas and electric light can no doubt be used advantageously under those conditions, and I am not prepared to say that any one lamp is better than any other lamp, and I think that holds not only for foundries, but it holds for a good many other cases. If for example, suppose we speak of the Mazda lamp, to use a trade name with which you are all familiar. Now the Mazda lamp may be unsatisfactory without some tinting device in connection with it, for some classes of work. If you use a slight tinting device, it may answer. Therefore it would not do to say that an incandescent lamp, or a flaming arc lamp, or a gas lamp or a Welsbach type, was not suitable, unless the lamp be supplied in the best form in which we may be able to obtain it. So that in direct answer to your question I say that several types of lamps may be used very successfully for the illumination of foundries.

MR. ——: I would like to ask your definition for glare.

MR. MARKS: Glare is light out of place. That is about as near as I can come to it without being too technical.

MR. ——: Let us have the technical.

Mr. Marks: I am afraid you are asking me something that would make my good friends here very sorry, and I would never receive another invitation if I attempted to define glare from the technical standpoint, for the reason that our committee has as many as 100 printed pages of technical report as to what constitutes glare. I think perhaps if you will look at it from another standpoint, that the situation would be a little more clear. You take a light that is annoying to the eye, whether it be a direct light or a lamp such as the bowl or hemisphere that are mounted underneath the balcony here, if it is annoying to the eye, I think I can call it a glaring illumination. And that is about as near as I can come to an offhand definition of glare, without any attempt to define its limitation, and I would not attempt to do that because others, far more skilled than I am in research work, have been unable to do so, to define the absolute limits, and the reasons they cannot do that are clear enough, for the reason that there are so many variables. If you look over at the lamp in the corner, look at it for a short time, you will find it is annoying. It is not extremely bright. The light is covered with a diffusing globe. It is annoying because of the contrast conditions. You have got a dark surface underneath. But if you put that light up against a white column, you will find that you won't have any annoyance. Not because it is bright, but because it is up against a dark surface. You are getting right back to the point that I made in the paper. Contrast is the vital problem in illumination. So that the whole glare effect is one of contrast. How then can we define glare unless we can define the conditions of contrast? The light is glaring over in the corner, but it would not be glaring if you put it up against a light surface.

Mr. ——: Do you think it is possible to develop any proper code, that would cover even a majority of the factories in any particular State?

Mr. Marks: Have you seen the most recently issued code, that of the State of New Jersey?

Mr. ——: I do not think I have.

Mr. Marks: It seems to me a pretty good attempt to do the very thing you say. It is a little pamphlet of forty-two pages, of which a little over two pages are devoted to the specifications that it be carried out by the factories, in the way of providing minimum intensities for different classes of work, and in the way of shading lamps in the distribution of light, in emergency lighting, and in switching and controlling. Very simple rules that the State has framed, believing that the factory managers will all be desirous of carrying them out. Their idea was to put this thing before them so they would know what was wanted. These are recommendations for standard practices for different classes of work. Now in order to supplement that and make it perfectly clear, an appendix, consisting of some forty pages, describes the limitations of the rules. That is about what it amounts to. The Pennsylvania code was adopted on April 13th, and went into effect on June 1st, last, and as I understand, with the exception of a few minor points, has been working out very satisfactorily. I have heard from the Commissioner of Labor of the State of New Jersey that they hope that this code in the State of New Jersey, copies of which have recently been placed in the hands of the managers of all the factories of the State, will likewise work well.

MR. STOFER: We have with us a physician this afternoon. I think we have had several physicians. Naturally we become quite alarmed if we think a physician is going to talk seriously to us, but I am very sure in this particular case we will be quite interested in hearing from Dr. Charles A. Lauffer. His subject is Heat and Ventilation and their bearing on Health and Productivity of Workers from the Viewpoint of the Physician in Industrial Practice.

HEAT AND VENTILATION: THEIR BEARING ON HEALTH AND PRODUCTIVITY OF WORKERS FROM THE VIEWPOINT OF THE PHYSICIAN IN INDUSTRIAL PRACTICE

BY DR. CHARLES A. LAUFFER, WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY

Body Heat.— The normal temperature of the human body is 98 3/5° Fahrenheit, 37° Centigrade. The body temperature is the same during all seasons of the year, in all extremes of latitude, and among all races. Diurnal variations of one degree, depending on the hour of the day, diet, degree of activity, and other factors, are within the normal, but variations from the standard 98 3/5°, by so much as two degrees in body temperature, indicate some abnormal condition, that calls for investigation.

Man is a warm-blooded animal, and his heat must be maintained. No other creature can maintain its life and develop its species in all latitudes from the tropics to the polar regions, as man does. Man adapts himself to all climates because he has the intelligence to create and maintain the environment essential to his comfort, health, and safety.

Anthropologists tell us that primitive man had long hair, covering his whole body, hence required no overcoat. Archaeologists inform us that our civilization evolved in the fertile valley of the Euphrates, and in the valley of the Nile, in the sub-tropics where life was spent in rural pursuits in the open air, hence in regions and under conditions where many of the problems that confront our civilization did not exist.

Solar Heat.— The sun is the ultimate source of all heat and energy on our planet. Science has evolved the fact that the solar heat given to the earth in one year's time is the equivalent of the heat obtained from the combustion of one and a half trillion tons of coal. The sun warms, feeds, and clothes us. The food we eat is oxidized in our bodies just as coal is burned up in a stove. Physiologists teach us that the human body creates no energy. It merely converts the potential energy in our food into kinetic energy. The furnace creates no heat, it merely releases the potential energy stored in the coal, æons ago, when the luxurious vegetation of the carboniferous era, produced the veins of coal, on which we now rely for our prosperous industries. Solar energy carries the misty vapor from land and sea to the clouds. The rains descend, and the harnessed energy of Niagara becomes an expression of solar energy, typifying man's conquest of nature.

Science teaches that the atmosphere covers the earth to the height of forty miles. Only five miles of this encircling atmosphere is known to man. The atmospheric pressure, fifteen pounds per square inch at sea level, becomes reduced as we scale high mountains or soar upwards in an aeroplane. Yet at all altitudes, the relative proportion of the constituent gases in the air is uniformly the same. The winds effect the diffusion of gases so perfectly that the composition of air is uniform throughout the earth.

When man lives out of doors, in air heated and energized by the sun, breathing air sterilized by solar energy, the perplexing question of efficient yet economical heat and ventilation does not arise.

Warmth Appreciated.— Modern man is born indoors, and the average man spends most of his days under a roof. Living in houses imposes artificial conditions, as compared with the out-door life of primitive man. Our rapid change of population from rural to urban life in the past forty years is part of a world-wide exodus from farm life to life in factories.

Traveling northward in his conquest of nature, man must necessarily create a sub-tropical atmosphere, provided with warm, fresh air, in which to live. Every man wants a continuous summer with temperature such that he can work with his sleeves rolled up, unburdened with an excess of clothing. It is too cold on the farm; there is no work and a scant income during six months of the year, hence the drift of population is ever towards the city. For his home, office, and factories, man must manufacture a suitable climate. Man's environment indoors must coincide with that in which he thrives best outdoors. In this rigorous Northern climate the whole animal creation, including men, requires shelter from the inclemencies of the weather. Man's home life is thus necessarily spent in a house, and increasingly his industrial life is also spent under a roof.

Heat Regulation.— The blood temperature must be uniformly maintained at 98 3/5°. Nature has provided within the body a mechanism for (1) creating heat, (2) dissipating heat, (3) regulating heat. Physiologists term these three functions (1) thermogenesis, (2) thermolysis, and (3) thermotaxis.

Heat Production.— Sugars and starches combine with oxygen, furnishing us heat and energy, giving as end products carbon dioxide (CO_2) and water (H_2O); the oxidation of fats and proteids also contributes to our heat and energy production.

Heat Dissipation.— The evaporation of perspiration cools the body. Fully 90 per cent of the total heat dissipation is from the skin. Each gram of perspiration vaporized from the skin extracts 582 calories of heat. The skin also dissipates heat by radiation and conduction. Lesser quantities of heat are lost (a) by eating and drinking cold food, which must be heated to body temperature and (b) by respiratory heat loss. The expired air is heated to body temperature, and is saturated with watery vapor,— a fact which everybody appreciates on a frosty morning.

Nervous Mechanism.— The regulation of heat production and heat dissipation is effected automatically by the vasomotor mechanism of the sympathetic nervous system. Perspiration increases in hot weather, and during muscular exertion. Less blood on the other hand, is sent to the skin in cold weather, and during inactivity.

If (1) heat production increases, and (2) heat dissipation is reduced, there develops a fever, a hyperpyrexia: this condition of elevated temperature is familiar in all acute fevers, such as grippe, pneumonia, typhoid fever. If, on the contrary, (1) heat production is increased, and (2) heat dissipation is accelerated, then the temperature drops; free perspiration accompanies a sudden drop of body temperature, and the cooling of the body is due to the rapid evaporation of the perspiration.

Clothing.— Clothing protects the skin from the air. The uncovered skin radiates heat too rapidly, hence clothing assists nature in maintaining the proper temperature. As confined air is a relatively poor conductor of heat, several thicknesses of thin clothing, rather than one thick garment, thus providing more air spaces, retain body heat more satisfactorily. Clothing should be porous, so as to provide adequate ventilation for the skin, hence gauze or mesh garments of cotton, linen, or silk, against the skin are preferable, as they readily dissipate moisture and do not stay wet nor cling to the skin. Ribbed underwear, part wool and part cotton, is excellent. The test of any garment to be worn next the skin, is to hold it over the mouth and nose; if you can breathe through it freely, the ventilation of the skin will not be impeded by wearing such a garment. Wool absorbs moisture quickly, but does not readily give it off; it is preferable material for outer garments.

Water is a good conductor of heat, hence wet garments permit the skin to radiate heat too rapidly. Wet clothing must be changed for dry to prevent this undue loss of body heat, and the consequent increased liability to latent and communicable diseases. It is, therefore, a part of good business management to safeguard the health of employees, whose clothing becomes moist by excessive perspiration, or wet from other causes, by providing lockers, and facilities for bathing. Workers in engine rooms, especially, require shower baths so that they may go home in dry, clean clothes. To stand exposed on a street corner, chilled by the blasts of winter, while clad in wet clothing, invites respiratory and gastrointestinal diseases, and may be the exciting factor in causing pneumonia or rheumatism. An overcoat is always necessary in going outdoors from a warm house or factory. It is suicidal, particularly when fatigued, hungry, and overheated from the day's work, to sit, stand, ride, or even walk, out of doors, without at least wearing an overcoat, of a weight proportional to the outdoor temperature.

Heated Houses.— The maintenance of body heat requires that houses be heated, but as yet no ideal system for heating our homes and factories seems in sight. Our great-grandfathers burned hickory logs on an open hearth, and the smoke went up the wide chimneys. Air entered their homes through the cracks around the doors and windows; and, in the winter, the snow sifted through the shingle roof. Our grandfathers substituted coal for wood, and burned it in open grates and in stoves. Our fathers had hot-air furnaces, didn't like them, and changed to steam or hot water.

Hot-air furnaces, made of cast-iron, soon warped, and carried dust and smoke into the house. Modern hot-air furnaces, made of steel with welded joints, do not carry dirt and odors into the house. They do not rapidly deteriorate with age. The great volumes of heated air carried into a house supplied by a hot-air system must have an exit. Doors and transoms should be kept open. Facilities for removing the air from the building are practically unnecessary, in homes having ample air space for each occupant, providing the intake for the furnace is from the inside of the house; the waste air from the heated rooms can thus be fed into the furnace, and only part of the intake need be air from the outside.

A cogent objection raised against hot-air furnaces, which applies with equal force to steam radiators, and steam pipes (the indirect system), is that the air is heated too hot before it enters the room. It is contended that air is burned when it is heated to 160° F., and that at this temperature the organic life in the air, the bacterial micro-organisms, which are always present, are destroyed, and converted into an irritating dust. On this theory, hot-water radiators with large radiating surface, so that the water never need reach a high temperature in the radiators, to maintain a comfortable room temperature, is regarded as a superior method for heating residences.

Steam pipes, over which cool air is passed, thus warming the air before it enters the room, is an approved method of heating, extensively employed for institutions, schools, churches, theatres, office buildings, and factories. There is no essential difference, however, between the hot-air furnace, and the indirect method — conveying the steam in pipes to the vicinity of the rooms to be heated, then passing air over the hot pipes before it enters the rooms.

With steam and hot-water radiators, ventilation may be provided independently of heating, which is evidently the preferable method. Still air is more pleasing than a draft. Under certain conditions, moving air is comfortable, yet headaches and neuralgia, "coughs" and "colds" ensue, when factory windows are raised, and those individuals who fear air in motion, are exposed to drafts. Hot air may act similarly, if drafts are permitted.

From the health standpoint, the problem of heating and ventilating in the home is intimately connected with the heating of factories and public buildings. Employees are generally exposed to worse hygienic conditions for longer hours in their homes and boarding houses, than in the shops and factories where they are employed. The diseases that develop in shops and factories reflect the state of the public health of their respective communities.

Temperature and Humidity.— The sensation of warmth and chilliness is a subjective feeling, and is not a reliable criterion of the true temperature in a room. The reading of the dry bulb thermometer must be supplemented by deductions from the wet bulb thermometer.

Room temperature of 68° F. will prove chilly if the humidity is low, 68° will prove comfortable providing the relative humidity is 60 per cent to 80 per cent. Temperature should be not less than 60° F., nor over 72° F., unless the outside temperature is so high that artificial heat is not employed.

A cellar that appears dry and warm, when you enter it in the winter time, may seem cool and damp when the same person enters it in the summer time, though the dry bulb thermometer may register a temperature nearly identical for winter and summer. Our sensations of heat and cold at the moment we enter a room depend on our physical condition, as related to the temperature, and the relative humidity of the atmosphere we enter.

A temperature of zero at New York or Chicago, in consequence of the high humidity along the sea coast and the lake front, may be more perceptible than 30° below zero in North Dakota or Montana, owing to the relatively low humidity in those States.

Every housewife knows with what delightful rapidity the clothes will dry on certain days. Light winds absorb the moisture and in an incredibly short time, the clothes are dry. " Good " days alternate with " bad " days for drying clothes. On the " bad " days the air is already so saturated with vapor that it can absorb no more.

A film of moisture collects on our lenses, when we go from a cold atmosphere to a warm room, as those of us who wear glasses can readily testify. The precipitation of moisture on the cold lenses is due to humidity, and is proportionate to the relative humidity of the room entered.

The frost on the window-pane on a winter morning gives evidence of a greater humidity in the house than without. If there is more frost on the kitchen windows than elsewhere in the house it proves the greater humidity in the atmosphere of the kitchen. Windows should sweat. If there is no frost on the window-panes, when winter is raging without, it proves that the air within the house is deficient in humidity.

Air can take up a definite quantity of moisture, depending on its temperature. When confined air has evaporated all the water it will hold, it is said to be " saturated."

One cubic meter of saturated air at different temperatures will contain the following amounts of water vapor:

2 grams at — 10° C.
5 grams at 0° C.
9 grams at 10° C.
17 grams at 20° C.
30 grams at 30° C.
597 grams at100° C.

From this table, it will be seen that air, which is saturated at one temperature, can, at a higher temperature, take up still more water vapor before becoming saturated; but if cooled, it must deposit some of the water vapor which it already has.

The air nearest the earth contains the most moisture, because it is the warmest. At high altitudes the air is deficient in heat and humidity, as well as reduced in atmospheric pressure.

When air, saturated with water vapor, becomes chilled the vapor becomes visible. The clouds are composed of water vapor. The clouds lie at the zone of contact of the upper strata of air with the lower warm strata of air. The clouds, thus covering the sky, restrict heat radiation from the earth, and their presence conserves the earth's warmth for us. Great masses of cold air high above the earth may drive the clouds, condensing their watery vapor, and precipitating their moisture as rain or snow. The sun's rays by day would be intolerable were it not for the protection afforded by the clouds. The fierce heat of the sun on the summits of high mountains above the cloud line, and the cruel cold at night, in these high altitudes, attest the value to man of the oceans of distilled moisture stored away in the recesses of the heavens. On clear nights the earth loses its heat much more rapidly, because no heavy clouds are present to retard the radiation of the solar heat absorbed by the earth during the day. Hence, on a murky, cloudy day, with a relative humidity near the saturation point, the farmer has less to fear from frosts.

The Hygrometer.— These facts and others relative to humidity have been observed for ages, but it was late in the eighteenth century when Hatton, of London, noticed that a thermometer bulb read lower when wet than dry, an observation that led to the invention of the psychrometer, hygrometer, or wet and dry bulb thermometer. Credit for this invention is claimed by Leslie of Edinburgh and Mason of London.

The determination of relative humidity in terms of percentage is made with the wet and dry bulb thermometers as follows:

The mercury bulb of the wet bulb thermometer is covered with a wick, which draws distilled water from a cup by capillary attraction. The evaporation of this water from the wick, covering the thermometer bulb, is facilitated, if the air around the thermometer is kept circulating by means of an electric fan.

The wet bulb thermometer will indicate a lower temperature than the dry bulb thermometer, due to the cooling of the mercury in the bulb, produced by the evaporation from the wick. The drier the surrounding air, the greater will be the difference recorded by the dry and wet bulb thermometers. By use of tables furnished by the Weather Bureau, we may ascertain from the thermometer readings, the so-called relative humidity of the air. The United States Bureau of Standards also publishes a bulletin, dealing with measurements of humidity.

Anybody may convert a dry bulb thermometer into a wet bulb thermometer by means of a tube wick and a water bath, and can ascertain the wet bulb and dry bulb temperatures, from which the estimation of relative humidity is made.

A desirable hygrometer for the investigation of humidity is the Tycoe Hygrodeik, made by the Taylor Instrument Company of Rochester, N. Y. It presents wet bulb and dry bulb thermometers and an index hand, mounted on a triangular frame, on which the temperature scales are engraved. On its index hand there is a sliding pointer; this pointer is set at the wet bulb temperature, then the index hand is shoved over, until the sliding pointer touches the curved line corresponding to the reading on the dry bulb thermometer. The index hand will then point to the relative humidity on the scale at the bottom of the chart. The determination of relative humidity is accomplished within a fraction of a minute by this method; no arithmetic and no reference tables are required.

The wet bulb temperature may be defined as that temperature at which the air would become saturated, if moisture were added, without the addition or subtraction of any heat. The wet bulb depression, or the difference between the wet and dry bulb temperatures, is the measure of the amount of moisture present in the air. By introducing sufficient moisture in the air, the dry bulb temperature may be lowered, until it is the same as the wet bulb temperature. At the dew point, or the temperature at which saturation is obtained, the wet bulb and the dry bulb temperatures are identical.

The term humidity thus refers to the amount of water vapor mixed with the air. Relative humidity expresses the ratio of the amount of moisture actually contained in the air, to the amount contained in the air when saturated at the same temperature.

Control of Humidity.— Since methods for the investigation of humidity have been completed, measures for the control of humidity are being perfected. Heated dry air may seem chilly, and slight drafts prove very noticeable; the excessive evaporation of perspiration from the skin lowers the body temperature. The body heat is reduced too rapidly, when heated air is too dry, and colds are readily contracted. Heated dry air is expensive, as higher temperatures are required than would be necessary for comfort, if the proper amount of humidity were present. Excessive humidity, on the other hand, retards the radiation of body heat, with the result that the evaporation of perspiration is below normal, taking place less rapidly than required for comfort. The higher the humidity maintained, within certain limits, the less the fuel consumption, because a lower temperature is then required for the same degree of personal comfort.

With the outside air at 30°, and its relative humidity at 100 per cent, that same air taken into a building, and heated to 70°, will present a relative humidity of less than 30 per cent. It is this excessively dry heated air that causes rapid evaporation of perspiration from the body, and the breathing of which tends to dry the air passages of the nose and throat.

Enough moisture escapes from steam radiators in some homes to require no further addition to the humidity of the atmosphere. Pans of water, placed under the radiators, with cotton or wool wicks, reaching from the pans and attached with twine to the radiators, will evaporate approximately ten gallons of water a day, in a six-room house. Pans of water placed on the radiators or under them, yet without wicks, will add less moisture to the water vapor in the atmosphere of the home; this plan cannot be recommended, it is inadequate. Turkish towels made soaking wet and laid over the radiators is a more effective way.

Washed air, as drawn through the washer, for schools, hospitals, hotels, public buildings, and factories, acquires moisture, suspended in fine particles. Air conditioning systems are now available that keep the humidity of the air at any desired point. The indoor climate can be controlled to suit the comfort of man, or may be altered to conform to the necessities of varied processes of manufacture.

Ventilation.— In its physiological aspects, the term ventilation refers to the aeration of the blood. It is estimated that all the blood in the body passes through the lungs every four minutes. Air is a food; when urging "pure food," we must recommend warm, clean, moist, fresh air. Air long confined in buildings is stale, and unfit for human consumption. Processes of manufacture may add dust, fumes, smoke and odors that are prejudicial to health. Tobacco smoke adds dust particles to the air, and noxious gases, that are irritating to the mucous membranes of the eyes, nose, and throat. Expired air is unfit to use over and over again.

Kirk's "Handbook of Physiology" gives the composition of inspired and expired air as follows:

	Inspired Air	Expired Air
Oxygen	20.96 vols. per cent	16.03 vols. per cent.
Nitrogen	79 vols. per cent	79 vols. per cent.
Carbon Dioxide	0.40 vols. per cent	4.4 vols. per cent.
Watery Vapor	Variable	Saturated.
Temperature	Variable	That of body.

Recently discovered gases, argon, krypton, etc., are included with nitrogen in the above table.

Not only does the expired air have an excess of carbon dioxide, a reduction in oxygen, and a saturation of water vapors,— expired air also contains ethereal gases. Intestinal putrefaction taints the breath; certain articles of diet, such as onions, and alcohol, flavor the breath. Decayed teeth, exhalations from soiled clothing and evaporating perspiration, likewise, add to the crowd odors in rooms deficient in ventilation.

A vitiated atmosphere is not an atmosphere deficient in oxygen,— it has been repeatedly demonstrated that even crowded halls and theatres have 20 per cent of oxygen. Experiments prove that man can live in an atmosphere containing 4 per cent of oxygen. Nor is a vitiated atmosphere one that is surcharged with carbon dioxide. This gas is less toxic than heretofore believed. There is seemingly an unknown element of vitiation, sometimes called crowd poison, sometimes known as anthropotoxin. Yet no definite and distinct albuminoid element has been recovered from vitiated atmosphere.

The chemical compounds sometimes found in impure air are animal products, and may be estimated by the amount of organic nitrogen; the increased carbon dioxide, and diminished oxygen may also be estimated in computing air vitiation.

The nitrogenous products in the air are demonstrated by shaking up a solution of potassium permanganate in a bottle containing the air; if present, the color of the solution will be destroyed.

Free ammonia is ascertained by Nessler's test, and organic or albuminoid ammonia by Wanklyn's test. Ammonia is almost universally present in the air, particularly in that of a crowded room, or the vicinity of decomposing animal or vegetable matter.

The presence of carbon dioxide can be determined by agitating the air in a bottle containing lime water; the solution will become cloudy. The quantity of carbon dioxide can be ascertained by collecting and weighing the precipitate.

The presence of carbon dioxide in an occupied room in excess of ten parts in 10,000 of air, is sometimes taken as an index of air supply and distribution. In breweries, or other manufacturing plants, where carbon dioxide is liberated in manufacturing processes, its presence is no index of air vitiation.

One per cent carbon dioxide in the atmosphere is not harmful, however, quoting Yandell Henderson, Professor of Physiology, Yale Medical School, New Haven, Conn.— (Vol. 2, p. 623 and 624, Transactions Fifteenth International Congress on Hygiene and Demography.)

" Hygienists are accustomed to estimate the effectiveness of ventilation by the amount of carbon dioxide which the air in a room contains. It is quite certain, however, that a quantity of carbon dioxide tenfold greater than the highest hygienic limit may be breathed practically indefinitely with impunity. To mention only a single fact indicating this, take such respiration experiments as those carried out in a closed calorimeter in the Carnegie Laboratory in Boston. The subject in such an apparatus breathes atmosphere which frequently contains considerably more than 1 per cent of carbon dioxide. In this he remains for days, or even weeks, and performs active mental or physical work with no ill effects whatever, yet the standard which hygienists are accustomed to use in estimating the purity of air limits the carbon dioxide to amounts so small as 'parts in ten-thousandth,' with 0.13 of 1 per cent as an upper limit. For more than fifty years, it has been recognized that carbon dioxide, in itself, has little or nothing to do with the relations of air to health. Pettenkofer's standard for estimating ventilation by the carbon dioxide content of the air has continued to be used merely as a convenient index.

"A good many years ago, Hermann suggested that in reality the ill effects of bad ventilation are due not to the chemical composition of the inspired air, but to interference with the heat eliminating function of the skin. This view has been elaborated and placed upon a very firm experimental basis in recent years by Flugge and his pupils. All of their experiments were carried out upon man. The subject was inclosed in an air-tight box of small size and the experiments were planned so as to contrast the effects of chemical vitiation of the atmosphere, on the one hand, with the physical changes of high temperature and humidity, on the other. It was found that a high degree of chemical vitiation (i. e., reduction of the oxygen and increase of the carbon dioxide) was borne with no perceptible ill effects, so long as the air in the chamber was kept cool and dry. On the other hand, all of the ill effects of vitiated air were experienced, with even a slight chemical impurity, as soon as the temperature and moisture content rose sufficiently to interfere with the elimination of heat through the subject's skin. Particularly striking was one experiment in which one subject, placed within the chamber in a hot, moist, and chemically highly vitiated atmosphere, experienced all the ill effects of bad ventilation, although at the same time he was allowed to breathe fresh and perfectly pure air from outside, through a mouthpiece in the wall of the chamber. At the same time, another subject outside of the chamber breathed through a mouthpiece connected with the interior. The skin of the latter was of course under hygienic conditions. His air supply was supposedly highly unhygienic, but no ill effects were experienced. On the other hand, the subject within the box whose lungs received fresh air, but whose skin was exposed to a hot and moist atmosphere, felt dizzy and became nauseated.

"Very similar results have been reported by Leonard Hill in England. Hill described an experiment in which he and several of his pupils were shut up in a small chamber, as follows:

"'After forty-four minutes the dry bulb thermometer stood at 87° F., the wet bulb at 83° F. The carbon dioxide had risen to 5.26 per cent. The oxygen had fallen to 15.1 per cent. The discomfort felt was great; all were wet with sweat and the skin of all was flushed. The talking and laughing of the occupants had gradually become less and then ceased. On putting on the electric fans and whirling the air in the chamber the relief was immediate and very great, and this in spite of the temperature of the chamber continuing to rise. On putting off the fans the discomfort returned. The occupants cried out for the fans. No headache or after effects have followed this type of experiment, which has been repeated five times.'

"In the light of these facts, we seem to be forced to the conclusion that the effects of bad ventilation are not dependent upon the air which enters the lungs, but upon the temperature, moisture content, and drafts of the air in contact with the surface of the body. They depend upon interference with heat elimination by the skin. They are due wholly, or almost wholly, to heat stagnation in the atmosphere contained in the pores of the clothing surrounding the body."

Henderson agrees with Hermann and others in support of the theory "that one of the effects of cold upon the skin is to stimulate the pulmonary epithelium to secretory activity." The pulmonary epithelium exerts a selective activity in respect to oxygen, just as the intestinal epithelium exerts a selective activity in respect to food elements, discarding waste elements within the intestine.

Diffusion of Gases.— A small quantity of ammonia, chloroform or any other gas with a powerful odor, introduced into a room, is soon perceptible in every part of the room. The steam of the tea-kettle ascends upwards, then diffuses; tobacco smoke rises, but soon spreads over the whole room, appearing more dense in the higher strata of air. Smoke and colored vapors are employed in testing air currents, and the efficiency of exhaust systems of forced ventilation.

In high-roofed factories, having open corridors from ceiling to ground for the use of cranes, it is observed that on the ground floor the air is cooler, fresher, and purer than that of the higher floors.

Instructions to persons entering or leaving burning buildings recommend that the mouth and nose be covered with a handkerchief, and that the occupant crawl along the floor in effecting his escape, thereby avoiding the hot smoke vapors, which rise and fill the higher strata of air in the room, before reaching the level of the floor.

"The currents of impure air arise to the ceiling and escape, leaving the cooler and purer supplies at the floor, untainted by the vitiated air which arises from it," declares William Tribbles and others. This school argues that the air intake should be at the floor, the exit for foul air at the ceiling.

Another school of ventilation teaches that the impure air is heavy and drops to the floor, hence the fresh heated air should enter at the ceiling; the exit for spent air should then be at the floor level. The high entrance method obviates the draft incident to admitting air at floor level; it is claimed by this school of ventilators that the upper strata of pure heated air in the room descends, if a sufficient quantity of fresh air is forced in above, and that the lower impure air should be simultaneously exhausted.

That the supply of air from high inlets is false in principle, is maintained by the first school, on the grounds that "the air is so warmed when it leaves the lungs that it must perforce rise," "that the carbon dioxide leaving the lungs and skin is thoroughly diffused through the warm air rising from the body," just as is the carbon dioxide generated by a candle or gas flame; and that "a gas once diffused in the air can no more sink or settle down out of it and occupy a lower stratum, than can salt settle out of the sea to its bottom,"— carbon dioxide, and the ethereal organic gases must therefore rise with the current of warm air, and leave the room through a high exit. Bringing the supply of fresh air from above, it is thus contended, causes the supply of fresh air "to bring down with it the foul air which nature was endeavoring to remove."

The second school, nevertheless, bravely contends that the best circulation is attained when the inlet is located at the top, in tests conducted with clouded vapors, and have standardized on this type of ventilation.

Whether the intake is located at the floor, and the exhaust at the ceiling, or vice versa, it is contended that the air should be changed every ten minutes, computing thirty cubic feet air change per person per minute. This rate of air movement is subject to modifications, relative to (1) the cubic contents of the room per occupant, and (2) the extent of suction drafts for removing impurities at their source.

Again, there are confusing currents of air that militate against the success of many well-engineered systems of ventilation so that combination methods, as follows, are sometimes more advantageous:

(1) Fresh air may be admitted through ventilators along the outside of rooms, then exhausted near both the floor and the ceiling along the inner walls. Under conditions where this scheme is practical, it is efficient.

(2) The ammonia and formaldehyde fumes of Bakelite were annoying, until our engineers solved the ventilation problem in this manner: the forced intakes of air were located at floor and ceiling on the west wall of the room. Fans at measured intervals drove the air east. Suction exhausts at floor and ceiling on the east wall removed the spent air. To demonstrate its efficiency, the room was filled with dense smoke, and within three minutes the smoke was entirely removed.

Suction Ventilation.— Exhaust fans, connected with hoods, operated with sufficient suction to remove impurities at the point of their origin, "kept constantly running while such impurities are being generated or released," are needed "where dust, fumes, gases, vapors, odors, fibres, or other impurities are generated or released in the course of a business or process carried on in any work room or other place in quantities tending to injure the health of the occupants."* The discharge from such suction ducts or flues should be screened, provided with dust collectors and separators, and so located "as may be necessary to protect the fresh air supply of the building or adjacent buildings, and prevent any public nuisance."*

Fans stir up dust, drafts disseminate noxious fumes and vapors; suction ventilation to remove impurities at their source is, therefore, the best procedure in conserving the health of workers.

Mechanical exhaust for toilet rooms is desirable,— six changes of air per hour, as required by law in several states, tends to eliminate sewage gas contamination from this source. A velocity of forty feet per minute across toilet bowls, is very satisfactory. There should be only natural ventilation into, never a forced intake provided for a toilet room.

With adequate suction ventilation fully equipped, to eliminate noxious impurities at their source, the atmosphere of factories can be made safe and healthy. Good business instinct already appreciates the essential economy in manufacturing an indoor climate with a salubrious atmosphere, wherein the health and productivity of the workers is conserved.

Extremes of Temperature.— The worker is sometimes exposed to extremes of temperature. Low temperatures are controlled by systems of heating, hence need not concern us at this time. The records of Polar expeditions, and of the retreat of Napoleon's army from Moscow, tell of the baneful effects of extreme cold on the human body.

Excessive heat and humidity can in some degree be reduced and controlled, but the high temperatures of summer can never be mitigated, nor the stoking of furnaces made a comfortable job the year round, at a temperature approximating 72° F.

That excessive degrees of dry heat can be tolerated with impunity by man, has been known for many generations. Hooker's Physiology, published 1876, contains these pertinent paragraphs:

"Two Frenchmen were employed by the government, in 1760, to devise some method of destroying an insect which infested the grain at that time.

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*Heating and Ventilating Magazine, April, 1916.

The result of their experiments was the discovery, that by subjecting the grain to a certain degree of heat in an oven, the insect was destroyed, while the grain was not injured. While they were trying their experiments, a girl offered to go into the oven and mark the height of the mercury in the thermometer. It stood at 260°; and after remaining there for ten minutes, which she found that she could do without any great inconvenience, she marked it at 288°, that is 76° above the boiling point of water.

"These facts led to the famous experiments of Dr. Fordyce and Sir Charles Blagden, in England. With wooden shoes, tied on with list, they went into a room in which the thermometer showed the air to be at 260°. Their watch-chains were so hot that they could scarcely touch them, eggs were roasted hard in twenty minutes, and beefsteak was cooked in thirty-three minutes. And yet the same air that produced these results was breathed by them with impunity, and it raised the heat of the body but very little.

"The air which was breathed out from the lungs was so much cooler than the air of the room, that it was refreshingly cool to the nostrils, and to the fingers as they blowed upon them. In such cases, the evil effects of the heat are prevented chiefly by the great amount of perspiration that occurs, the vaporation of this abstracting the heat, which would otherwise accumulate in the body and produce disastrous results. The exhalation from the lungs, also has some influence."

In recent years, J. S. Haldane (Journal of Hygiene, 1910) has investigated the limits of temperature endured by man. His conclusions tend to discount the value of the dry bulb thermometer, and deductions based on relative humidity; he emphasizes the value of the wet bulb thermometer. If the wet bulb temperature registers 78° F., fatigue comes with slight exertion, and continued hard work is impossible; above 88°., wet, it is dangerous for most people. Ordinary persons cannot remain long in such a temperature; certain individuals can, however, acquire an immunity, and accustom themselves to endure high degrees of temperature.

Thermic Fever.— Cork helmets are worn by people of our latitude, who travel in the tropics, to prevent sunstroke. Excessive indoor temperature, as well as the noonday tropical sun, may cause thermic fever. Thermic fever is best defined as a febrile intoxication; a toxic substance is generated in the brain, or elsewhere, and attacks the patient with explosive violence.

In thermic fever, the skin is hot and dry; face flushed; breathing rapid and shallow; pulse feeble and rapid; nausea and vomiting; stupor, then coma; temperature in axilla 108° to 112°. Unless relieved by an ice bath, and heart stimulants, the patient will die.

Such is the gruesome picture conjured up by the mention of thermic fever, yet many industrial physicians, in extensive practice, over many years, have never met a bona fide case of thermic fever. Four cases we encountered, diagnosed as thermis fever, were equally correctly diagnosed as: (1) chronic alcoholism, uremia; (2) acute indigestion; (3) grip, then neurasthenia; (4) myocarditis and endocarditis, broken compensation,— hospital records proved four other identical attacks.

The resources of the human body are such that perspiration will be copious, in the presence of high temperature, thereby reducing the body temperature. It must be remembered, however, that advancing age and co-existing disease impair man's heat regulating mechanism.

Heat Exhaustion.— The copious perspiration may cool the skin excessively; the great loss of body heat may indeed lead to collapse.

In heat exhaustion, the skin is moist, pale and cool; breathing rapid and shallow; pulse soft and feeble; temperature subnormal — may drop to 94°. There is no coma. External heat and heart stimulants are required; the condition responds to treatment.

Among stokers on battleships, steaming through the tropics, many cases of thermic faver and heat exhaustion occur. With temperature approximately 84° F., wet, stokers must work short shifts, and ventilating fans must be installed in the engine room.*

Inasmuch as serious disturbances in heat regulation arise from temperatures exceeding 78° F., wet, there are certainly lower temperatures at which there will be diminished productivity of workers.

Too much heat dulls cerebral activity, and impairs the manual dexterity of workers, thereby decreasing production and increasing the incidence of accidents. A clear head makes a steady hand; proper atmospheric conditions thus contribute to both safety and efficiency.

Fatigue from High Humidity and High Temperature.— The verdict seems unanimous among observers everywhere that "a disinclination to work," "an actual inability to perform continuous muscular work," "decreased efficiency," "discomfort," "indifference," "weariness," even "exhaustion," develop under industrial conditions where workers must labor under the enervating effect of combined high temperature and high humidity.

In a hot, humid atmosphere, the cutaneous vessels are congested and dilated; there is thus induced an anemia of the brain, which is sufficient to account for the lassitude, apathy, and indifference of workers. Perspiration does not dry readily under a high wet bulb temperature.

Continued exposure to a hot, humid atmosphere elevates the temperature, and the febrile state occasions increased chemical processes that prepare the way for fatigue. Bacterial toxins increase nitrogen waste; so does hyperpyrexia from a high wet bulb temperature. The blood then contains the abnormal products of increased proteid disintegration, in addition to the normal fatigue substances, and "these act toxically to diminish the activity of the tissues." †

Yet life in the tropics is possible, and employment in those industries, where tropical heat prevails, is endurable, providing attention is given to hygienic living. Fortunately, in our climate, high temperatures are not associated with high humidities in the general industries. Heat, temperature, and humidity, moreover, may respond in some measure to intelligent control.

Factors Reducing Fatigue

(1) Abundant Sleep.— The waste products in the blood and tissues, which induce fatigue, are produced more rapidly than eliminated during waking hours, but elimination catches up with production, and a health reserve is maintained, if the hours for sleep are ample.

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* P. 502, Vol. 5, Transactions Fifteenth International Congress on Hygiene and Demography.

† P. 510, Vol. 3, Transactions Fifteenth International Congress on Hygiene and Demography.

(2) Bathing.—The skin is delicate and sensitive, and requires a frequent cleansing bath. The lungs excrete the carbon dioxide waste; the kidneys, urea, urates, and inorganic salts; the bowels, food detritus, but the waste products eliminated by the skin exceed in weight the waste eliminated by lungs, bowels and kidneys combined.

(3) Proper clothing, to protect, yet ventilate the skin, as before alluded to.

(4) Diet, so regulated as to control heat and energy production, as related to season and occupation,— such as increasing cereals and fruits in summer.

(5) The maintenance of personal health by hygienic living.

The diurnal and seasonal fluctuations of outdoor temperature, make it difficult to maintain the equilibrium of indoor temperature, either in the home or the factory. Hence, the personal equation, in the maintenance of a uniform body temperature, must not be disregarded. Yet heat and ventilation as related to the factory is beyond the control of the individual employee.

It is observed that in those establishments where heat and ventilation are properly correlated, there is noted a physical and mental rejuvenation, an increased loyalty among employees, a diminished labor turnover, a decrease in accidents, and a marked percentage of increased production.

Summary and Conclusion.— Body temperature is maintained by solar heat. The evaporation of perspiration from the skin is the chief method of heat dissipation; clothing and heated houses are measures for maintaining body heat. The manufactured indoor climate is incomplete, if coal is merely fed into the furnace, and humidity conditions are ignored. When ferns and house plants wither and die, the humidity is too low; humidity is maintained to preserve paintings, antique furniture, and cabinet work from shrinking and cracking; excessively dry air draws particles of moisture from everything indoors, including the surface of our bodies, and the air passages of nose and throat. More water in the atmosphere of homes and factories is often required, and less heat. When indoors it is cold, outdoors at the same temperature it is warm and balmy, the relative humidity is greater outdoors than indoors.

Expired air is unfit to use over and over again. Exhaust fans for local ventilation, to remove dust, fumes, odors, and impurities at their source, to prevent their dissemination by general ventilation, render the atmosphere of the factory more salubrious.

The diffusion of gases is such that crowded buildings may require the exit for vitiated air from both floor and ceiling, though conditions encountered, rather than pet theories, should control the selection of a ventilating system.

Archaic views of the toxicity of carbon dioxide, and the withdrawal of oxygen from the atmosphere of buildings are subsiding; the stagnation of air, high humidity, and other factors, intensify the discomfort from an atmosphere apparently vitiated. Yet adequate ventilation should be maintained, to promote the health and productivity of workers.

Excessively dry temperatures are readily endured by man, but high wet bulb temperatures impair the productivity of workers, may induce fatigue, even heat collapse, or thermic fever.

By attention to such measures of personal hygiene as relieve fatigue,— sleep, bathing, clothing, diet, etc., the individual's ability to withstand fluctuations of diurnal and seasonal temperature is enhanced.

MR. STOFER: I am sure we are all very grateful to Dr. Lauffer for the paper, which certainly denotes a great deal of extended research work.

We will now hear a paper by Mr. C. A. Booth, of the Buffalo Forge Company.

MR. M. H. CHRISTOPHERSON: Mr. Chairman, may I say a word while the speaker is getting ready. During the week some representatives of building trades, organizations, and a contractor, I believe, called attention to the great loss of life and the accidents due to building construction, and while that may not interest so many of the factory managers and others, I know from experience in the many years that I have been in that line of business myself that it has a very important part in the accident line. For that reason and in view of the fact that a resolution was passed this afternoon, asking that these meetings be continued hereafter, I ask that at the next meeting the Commission be requested to call for papers on the subject of prevention of accidents in building construction. I ask that particularly now and before the delegates get away. I offer that as a suggestion to the Commission.

MR. W. S. HOSKINS: I would be very glad to second that. It is very necessary to have good scaffolding and construction.

HEAT AND VENTILATION AND THEIR BEARING ON HEALTH AND PRODUCTIVITY OF WORKERS FROM THE VIEWPOINT OF THE HEATING AND VENTILATING ENGINEER

By C. A. BOOTH, BUFFALO FORGE COMPANY

Employers in general realize to-day more than ever that one of the greatest assets of a business, in that it is an efficiency producer, is the proper and adequate heating and ventilating of the work rooms, machine shops, foundries and offices. The physician is not the only one who realizes that a great deal of preventable sickness results from poorly heated and ventilated buildings, and this is entirely aside from the great amount of so-called vocational disease which afflicts the workers in factories where the operations are such as to cause the setting free of abrasive and irritating dusts or poisonous gases.

No cost-keeping system, no bonus plan, no welfare work, in fact no system of modern efficiency will be complete or successful unless first and foremost the comfort of the employee is considered. This is true not only on account of cheerfulness and goodwill resulting from bodily comfort, but there is a very considerable direct return in the quality and quantity of work done under favorable conditions compared with the output of cold and draughty or overheated factories, poorly lighted, lacking in decent toilet facilities, and perhaps carrying on work the conditions of which lead certainly to disease of various kinds.

Our efficiency experts have made a study of the cost to fill positions with new men, and are aiming to reduce the number hired and discharged. They will tell you also that the cost of time lost through sickness in interruption to work can with difficulty be estimated. With one operation following another in an endless chain, all are slowed up by the stopping of one; friction and lost motion result, with corresponding increase in factory costs. We do not need the advice of the expert to know that this is true and that faculties impaired by stuffy work-rooms or fingers stiff and bungling from cold are not conducive to good work.

Considering first the heating of a factory, the features governing the design and selection of a system are:

1. Desirable temperature.
2. Even distribution of heat —
   - a. For prevention of drafts.
   - b. Economical application of heat to avoid radiation of heat out of doors, and over-heating of unoccupied space.
3. Cost of installation.
4. Economy of operation and maintenance.

The desirable temperature depends largely on the nature of the work, small work requiring a higher temperature than large work, which calls for considerable physical exercise. In general, however, the temperature for a machine shop is 60° to 65°, for a foundry five or ten degrees less, and for other rooms not over 65° to 70°.

The distribution presents problems which are sometimes very difficult. Large open spaces prevent the efficient placing of direct radiation and the chimney effect of monitor roofs causes drafts and the rapid escape of warm air, with consequent inward leakage around doors and sash which is quite serious in cold weather. Such cases are best dealt with by the plenum system of ventilation, in which a slight outward pressure maintained by a fan prevents this infiltration, while the air is diffused and the heat kept down near the floor. In such cases it is not necessary to use more than a small proportion of fresh air from outdoors, unless the number of operatives in proportion to the floor space is much greater than is customarily the practice.

Buildings of average story height present no unusual problem in heating by direct steam or hot water radiation. Salamanders, except as a temporary heat for buildings under construction, should not be used, for although economical the effect is practically the same as the gas heater without a stovepipe.

Along with heating the problem of cooling has to be considered in such cases as factories where a great amount of heat is set free. Some textile mills concentrate machinery using as much as a thousand horsepower on a single floor, all of which is dissipated in the form of heat. These buildings require no heat in the coldest winter weather, but are excessively hot in summer, sometimes necessitating shut-down. Awnings or white shades, large areas of swinging sash and forced ventilation by fans are methods used to make such shops livable, and with the addition of spray cooling systems by which the air is brought down to the dewpoint temperature, it is possible to make a difference of twenty to thirty degrees under the worst conditions.

After making such an installation in the offices of the Ford Motor Company, Henry Ford gave instructions for the equipment of the main machine shop at Detroit, saying " If this is good for the office force, it is good for the men in the shop." This shop is 1,480 feet long, with 2,500 workmen, and the air supplied for ventilation is 33,000,000 cubic feet per hour. Two mills of the American Thread Company, duplicates as to construction and class of work, showed that the one with an efficient cooling system had a temperature of 88° with an outdoor temperature of 90° in the shade, while the other not thus equipped ran up to 101°.

These heating and cooling problems are usually inseparable from the problem of ventilation, or at least may be best considered together. In many factory buildings the natural leakage and circulation of air due to gravity and assisted by opening of doors and windows is sufficient. Ventilation is only a matter of air dilution, anyhow; the fresh air which comes in without mechanical means, or is introduced by fans, cannot be brought to each occupant directly, but displaces or mingles with the air already contained and to that extent purifies it and renders it more fit for breathing. If the pollution is rapid on account of the number of occupants, or the lack of means for natural ventilation, then the air becomes stuffy, disagreeable odors may or may not be present, the quantity and quality of work done suffers, and simple tests will show a large amount of carbonic acid gas, which though not itself poisonous, is the usual indication of a vitiated atmosphere. In such cases mechanical ventilation affords a ready means for bringing in and uniformly distributing a sufficient quantity of fresh air, which may be previously heated, cooled or washed.

Our climate is, of course, as bad as any one could find, with sudden variations in temperature and humidity, and when we add to this the menace of the overheated, steam-heated building with relative humidity of 20 to 25 per cent. it is no wonder we are afflicted with colds or worse. I will not trespass on the field of the physician further than to say that excessive dryness of the air undoubtedly paves the way to throat and catarrhal trouble by irritation of the mucous membranes, while at the same time this dryness of the air causes a great increase in the amount of dust it carries. In England, where they have looked after the cotton mill operatives better than over here, they have statistics showing the greater amount of sickness in mills where the air moistening systems are inadequate. Cotton and tobacco are hygroscopic materials, having a tendency to absorb moisture when it is present in the air. When dry, their fibres are brittle, and in handling much dust is caused; air moistening systems do not remove the dust, but prevent it by putting the fibres in such condition as to be pliable. I have in mind a cigarette factory where the installation of a humidifying system cleared the air from dust almost entirely, when formerly it was impossible to see clearly across the room.

Fires in picker rooms, and dust explosions in flour mills may be largely prevented by air conditioning. These have been touched on in connection with the discussion of fire hazards. Coal mine explosions have been found due to dust in many cases instead of gas, and the moistening of the air will prevent these explosions.

Ventilation for the removal of excessive heat from furnaces, etc., to prevent the escape of noxious gases or acid fumes, or to carry off dust, lint and materials resulting from various grinding, buffing and polishing operations, is almost always mechanical, that is, by means of exhaust or suction fans. Many of these applications have become standardized; for instance, the laws of all of our manufacturing States have certain definite requirements for exhaust systems which are calculated to remove the dangers to workmen grinding or polishing metal articles. In most cases the size of the suction piping and fan are laid down, the arrangement for the hood surrounding the wheel and the velocity of the air or the amount of suction specified. Ventilating engineers have assisted in standardizing these requirements, and where no unusual conditions exist, the results will be uniformly good if the system is installed and operated in accordance.

In many cases however, a successful ventilating system must be the result of careful study, not only of the nature of the work done, but the conditions under which it must be carried on, the design of the machine as affecting the application of an exhaust system, and perhaps some changes must be made in the methods of work or the design of the machine before the trouble can be removed. Many operations long considered unavoidably dangerous have been rendered harmless through intelligent co-operation between the factory owner, the workman and the engineer. Very much along this direction has been done, particularly in the textile trades, in tobacco factories and in the various chemical industries.

A number of stereopticon slides were shown at this point in illustration of modern methods of ventilation.

It is interesting to note that in many such cases the benefit to the manufacturer in dollars and cents is a direct return so great as to be out of all proportion to the investment. Working conditions which were perhaps nearly intolerable, making it difficult to keep help even at high wages, have been so much improved that labor is easy to obtain and hold, at wages which need no longer take into consideration any unusual hazard or discomfort. At the same time these improved conditions bring about better and more efficient methods of operation.

I was interested to hear Mr. Thompson, of the Eastman Kodak Company, say yesterday that instead of being an expense their frequent fire drills, which they planned so as to come in the middle of the afternoon work, furnished an intermission and resulted in increased production; another proof of the claim I make that consideration for the health, safety and comfort of employees is not necessarily an expense item in every case.

The use of exhaust ventilation to remove danger of tuberculosis and other diseases requires the co-operation of employees. New methods are sometimes viewed with suspicion or dislike. Sub-foremen may from some mistaken idea of economy neglect to operate the ventilating apparatus or workmen through ignorance or prejudice throw the appliances aside and thus render them of no avail. It is here that labor organizations and employers must both assist in educating the men for their mutual benefit. Rules for their guidance should be understood by all, and frequently brought to the attention of the men. These rules must be enforced perhaps by discipline, for it is notorious that a rule devised for one's own benefit is the one most often broken, and the most ignorant class of workmen has no monopoly of this characteristic.

Legislation in New York State has been as forward as elsewhere, but much remains to be done in setting reasonable requirements, establishing standards of excellence which may be judged by simple methods of test and providing an inspection force competent to see these standards enforced.

MR. GAFNEY: I would like, for the Commission, just previous to adjournment, to thank the speakers who have made so many able addresses, presented so many valuable papers here; and also to present the Commission's thanks to the attendants who have contributed so greatly to the success of this first Industrial Congress. The Commission hopes that the Congress